Michael Noonan: Complementation

0 Introduction[1]

In this chapter we are concerned with sentential complementation, hereafter referred to simply as 'complementation'. By complementation we mean the syntactic situation that arises when a notional sentence or predication is an argument of a predicate. For our purposes, a predication can be viewed as an argument of a predicate if it functions as the subject or object of that predicate. So, for example, the subject of (1), *Elliot:*

(1) Elliot annoyed Floyd

can be replaced by various syntactic configurations that are notionally predications, *ie* consist of a predicate and a string of arguments:

(2) a. *That Eliot entered the room* annoyed Floyd
b. *Eliot's entering the room* annoyed Floyd
c. *For Eliot to enter the room* would annoy Floyd

The italicized constituents in (2) are all sentential subjects of *annoy* and therefore subject complements of *annoy*. Similarly, *Nell,* the object of *remember* in (3):

(3) Zeke remembered Nell

can be replaced by a predication that also functions as the object of *remember*, as we see in (4):

(4) a. Zeke remembered *that Nell left*
b. Zeke remembered *Nell's leaving*
c. Zeke remembered *to leave*

The italicized portions of (4) are object complements of *remember*. As illustrated in (4c), complements may be truncated in the sense that the notional subject and certain other elements of a complete sentence may be absent. Predicates like *remember, see, think, cause,* etc. that take subject or object complement are referred to as 'complement-taking predicates' (CTPs).

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[1] This chapter is a corrected, updated, and slightly revised version of the chapter that appeared in the first edition of these volumes. That version was written in 1979 and embodied the theoretical and conceptual apparatus of that period. In preparing this version of the chapter, I decided to leave the conceptual apparatus intact since I believe that it provides a useful way for fieldworkers to think about the structures described here. Needless to say, a theoretical presentation of the same material, whether from a formalist or functionalist perspective, would look rather different, but would be much less practical for the purposes for which this work is intended.

Not all embedded sentences can be considered complements: relative clauses, purpose and manner clauses, locative and temporal clauses, etc. are not complements since they are not arguments of verbs. None of the italicized strings in (5) is a complement:[2]

(5) a. Alf saw the man *that Pearl knows*
b. Roscoe hit Floyd *to cause trouble*
c. *On entering the room,* Irv saw Max standing by the window
d. *When Zuma grows up*, she'll be a truck driver
e. Nelson entered the room *carrying a briefcase*

Further, in this chapter we are not concerned with cases that fit the semantic definition of complementation given above, but where the main predicate is syntactically reduced to the form of a clause-modifying adverb, as in:

(6) a. Oddly, Zeke eats leeks (*cf:* It is odd *that Zeke eats leeks*)
b. Strangely enough, Lucille knows Sanskrit (*cf.* It is strange *that Lucille knows Sanskrit*)

The organization of this chapter is as follows: in section 1 I discuss the morphology of complements, in section 2 the syntax of complements, and in section 3 the semantics of complementation. In section 4 I discuss complement systems. In section 5 I briefly discuss noun complementation .

1.0 The morphology of complements

1.1 *Complement types*

Even within a single language, complements can come in a variety of forms. English, for example, has four main forms for its complements, *ie* it has four main *complement types.* These complement types are illustrated in (7):

(7) a. *That Cartier defeated Dugué* would be significant
(*that*-clause)
b. *For Cartier to defeat Dugué* would be significant
(infinitive clause)
c. *Cartier's defeating Dugué* is significant
(gerundial or verbal noun clause)
d. Nelson saw *Cartier defeating Dugué*

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[2] Headless relatives, as illustrated in
Wanda knows *what Boris eats*
are likewise not considered to be complements even though they are, technically, clauses functioning as arguments of predicates. The grammar of these clauses is best considered along with that of other relative clauses.

(participial clause)

Other languages may have a greater or lesser number of complement types. For instance, Irish has only two complement types, illustrated in (8) (NZN = nominalization):

(8) a. Dúirt sé *go dtiocfadh sé*
said-3SG he COMP come(COND) he
'He said that he would come'
(*go*-clause)
b. Is maith liom *iad a fheiceáil*
COP good with-me them COMP see-NZN
'I like to see them'
(verbal noun)

Some languages may have the same number of complement types as English, but may have different sorts of complements. For example, Lango, a Nilotic language, has four main complement types:

(9) a. àtîn òpòyò *nî àcégò dɔ̀ggɔ́lâ*
child remembered-3SG COMP closed-1SG door
'The child remembered that I closed the door'
(indicative)
b. àtîn òpòyò *òcègò dɔ̀ggɔ́lâ*
child remembered-3SG closed-3SG door
'The child remembered to close the door'
(paratactic complement)
c. àtîn òpòyò *cèggò dɔ̀ggɔ́lâ*
child remembered-3SG close-INF door
'The child remembered to close the door'
(infinitive)
d. àtîn òmìtò *nî àcêg dɔ̀ggɔ́lâ*
child wanted COMP close-1SG-SJNCT door
'The child wanted me to close the door'
(subjunctive)

A complement type is identified basically by (1) the morphology of the predicate, (2) the sorts of syntactic relations the predicate has with its arguments [complement-internal syntax], and (3) the syntactic relation of the complement construction as a whole with the rest of the sentence [complement-external syntax].

1.2 *Complementizers*

Complement types often have associated with them a word, particle, clitic, or affix, one of whose functions it is to identify the entity as a complement. Such forms are known

as *complementizers.* Derivational affixes, such as English *-ing,* which are used to convert a form from one part of speech to another are not considered here to be complementizers. More than one complementizer may occur with a given complement type. Alternatively, some complement types may have no complementizer associated with them at all. In English, the particle *that* in (7a) is a complementizer associated with a complement type named after it, the *that*-clause. The particle *if* can also function as a complementizer with this same complement type, as in:

(10) I don't know if Zeke knows Harry

Most infinitives have the complementizer *to*, but some have no complementizer. Neither the verbal noun nor participial complement types have complementizers in English. In Lango, there is only one complementizer, *nî,* and it is used with two distinct complement types, the indicative as in (9a) and the subjunctive as in (9d), where the verbs differ from each other in grammatical mood. The *nî* complementizer is the main morphological distinguisher between the indicative complement type and the paratactic complement, which are otherwise similar morphologically, though the syntactic properties of the two differ considerably (section 2.4). The Lango paratactic and infinitive complements lack complementizers altogether .

The use of a complementizer with a given complement type is sometimes optional or contextually determined, *ie* its presence is determined by pragmatic, not grammatical, considerations. (11a) and (11b) are both grammatical, the choice between them signaling the pragmatic status of the information contained in the complement [Thompson & Mulac (1991), Bolinger (1972)]:

(11) a. Perry knows that *Hugh is vulnerable*
b. Perry knows *Hugh* is *vulnerable*

When *that*-clauses are subjects, however, the use of *that* is obligatory:

(12) a. *That Hugh is vulnerable is* remarkable
b. **Hugh is vulnerable* is remarkable

English *that* can be contrasted with the behavior of the complementizer *go* in Irish, which is obligatory in all contexts:

(13) a. Tá a fhios agam *go léifidh sí an leabhar*
COP its knowledge at me COMP read-FUT she the book
'I know that she'll read the book'
b. *Tá a fhios agam *léifidh sí an leabhar*

The English complementizer *to* associated with infinitives is also dependent on context, but the principles governing its distribution are rather different from those

governing the distribution of the *that*-complementizer. As indicated above, the use of *that is* optional with object complements, but obligatory with subject complements: the distribution with subject complements is therefore syntactically determined. There are syntactically determined aspects of the distribution of the *to*-complementizer also: when infinitives are in other than object position the *to*-complementizer is obligatory. But in object position, the distribution of *to* is governed, rather arbitrarily [from a synchronic perspective], by the CTP. With complement-taking predicates like *force, want,* and *allow* the use of *to* is obligatory:

(14) a. Evelle forced Jerry to change his plans
b. *Evelle forced Jerry change his plans
(15) a. Joe wants Pierre to retire
b. *Joe wants Pierre retire
(16) a. Henry allowed Dick to speak
b. *Henry allowed Dick speak

The predicate *help* can occur with or without *to*:

(17) a. Leonid helped Boris to see the error of his ways
b. Leonid helped Boris see the error of his ways

To is ungrammatical with *make* and *let*:

(18) a. *Bert made Jimmy to blush
b. Bert made Jimmy blush
(19) a. *The judge let Spiro to go
b. The judge let Spiro go

In Yaqui, one complement type takes two complementizers: *ke,* a particle that precedes the clause, and *kai,* a clause-final clitic. With this complement type, one or both of the complementizers must be present. This is illustrated in (20) (data from Lindenfeld 1973; Carlos Seguín, personal communication):

(20) a. Tuisi tuʔi *ke hu hamut bwika-kai*
very good COMP the woman sing-COMP
'It's very good that the woman sings'
b. Tuisi tuʔi *ke hu hamut bwika*
c. Tuisi tuʔi *hu hamut bwika-kai*
d.*Tuisi tuʔi *hu hamut bwika*

Complementizers typically derive historically from pronouns, conjunctions, adpositions or case markers, and, rarely, verbs, and so may resemble words currently used in these

capacities.[3] The English complementizers *that, if* and *to* are derived from and thus resemble the demonstrative pronoun *that,* the conjunction *if,* and the preposition *to* respectively. Similar examples can be cited from a great number of languages. In Kanuri, an East Saharan language, clitics otherwise functioning as accusative and dative case markers may be affixed onto finite verbs and function as complementizers (data from Lukas 1967):

(21) *à*vá-nzə́-yè shí-*ro*̀ kúŋə́nà cîn
father-his-NOM him-DAT money give-3SG
'His father gives him money'

(22) *sá'vá-'ŋyí íshìn-rò* təmăŋə́nà
friend-my come-3SG-DAT thought-1SG-PERF
'I thought my friend would come'

(23) sá'vá-'nyí íshìn
friend-my come-3sg
'My friend is coming'

In Russian, an interrogative and relative pronoun *čto* functions also as a complementizer:

(24) *čtó* ty čital
what you read
'What were you reading?'

(25) Ja ne znaju, *čtó* ty čital
I NEG know what you read
'I don't know what you were reading'

(26) Ja ne znaju, *čto ty čital*
I NEG know what you read
'I don't know that you were reading'

As a pronoun, *čto* is always stressed (24-5). As a complementizer, as in (26), it is not stressed. Maori illustrates the common tendency to use an adposition with dative [indirect object] or allative [direction toward] senses as a complementizer for complements with determined time reference (*cf* section 3.1.1 ; Clark 1973):

[3] See Anderson (1971) and Washabaugh (1975) for discussion of the development of complementizers from adpositions, Lord (1993) for development from verbs, and Frajzyngier (1991) for development from demonstratives.

(27) E hoki ana au *ki* te kaainga
PRES return PROG I to the village
'I'm going back to the village'

(28) ka hoatu te taurekareka *ki* te rangatira
AORIST given the slave to the chief
'The slave was given to the chief'

(29) E hiahia ana raatou *ki te haere*
PRES want PROG they COMP the go
'They want to go'

English *to* has the same range of uses as Maori *ki*. In Uzbek, a participle *deb* 'saying' functions as a complementizer (Abduzuxur Abduazizov, personal communication; and Sjoberg 1963):

(30) *Bu ɔdam bir ǰoǰa-ni oɣirladi deb* aytti u
this man one chicken-OBJ stole COMP said-3SG he
'He said that the man stole a certain chicken'

Sometimes the same complement type takes on different meanings with different complementizers. In Jacaltec, for instance, the sentence-like complement type can occur with several complementizers, either individually or in combination. One of these complementizers, *chubil,* implies that the information in the complement is accorded a high degree of credibility, while another, *tato,* is used with complements about which there is some reservation on the part of the speaker or even outright disbelief. These differences are illustrated by the following sentences (Craig 1977):

(31) a. Xal naj *tato chuluj naj presidente*
said ART COMP will come ART president
'He said that the president would come'
b. Xal naj *chubil chuluj naj presidente*
'He said that the president will come'

(31a) would be a report of an assertion whose credibility is open to doubt. (31b), on the other hand, presents the reported assertion as a fact, since either the 'he' in (31b) is reliable, or the speaker has good reason to believe that the statement is true. In Kabre, a Gur language, the subjunctive complement can occur with the complementizers *nɛ́* and *zì* (SJNCT = Subjunctive):

(32) a. Màlàbá àbàlʊ́ *nɛ́ ísé*
pressed-1SG-PERF man COMP run-3SG-SJNCT

'I forced the man to run'

b. Màlàbá àbàlú zi *ísé*
pressed-1SG-PERF man COMP run-3SG-SJNCT
'I pressed the man to run'

With the *né* complementizer in (32a), there is an implication that the man ran, but in (32b) with *zì* there is no such implication.

1.3 *The morphology of complement types*

1.3.1 *Sentence-like complement types*

All languages have some sort of sentence-like complement type, one that without its complementizers has roughly the same syntactic form as a main clause. In a sentence-like (hereafter, s-like) complement type, the predicate has the same syntactic relation to its subject and its other arguments that it has in syntactic main clauses: it remains syntactically and morphologically a verb, and any case marking on subjects or objects will have the same form as that in main clauses (but see sentences (43-6) from Wappo below). Further, if the verb in main clauses is inflected for subject or object agreement in some language, then the verb in any s-like complement type in that language will also be inflected for subject or object agreement. In English, the sentence:

(33) Burt *is* a chicken farmer

is identical in form to the s-like complement in (34):

(34) Max knows *that Burt is a chicken farmer*

The form taken by the complements in (35) and (36) is not s-like:

(35) Max wants Burt to *be* a chicken farmer

(36) Burt's *being* a chicken farmer worries Max

Neither of the above complements meet the criteria for s-like complement types; the notional subject of the complement does not bear in either case the same syntactic relation to its predicate that it does in main clauses. In (35), the complement subject has been raised to object position in the matrix clause (*cf* section 2.2). In (36), the complement subject has a genitive case relation to its predicate. In neither case is the predicate inflected for subject agreement as in (33) and (34) above.

That a complement type is s-like does not preclude the possibility that its syntax may differ in certain respects from that of main clauses. In German, for example, the word order in s-like complements differs from that in main clauses:

(37) Er ist schlau
he COP cunning
'He is cunning'

(38) Es ist war, dass er schlau ist
it COP true COMP he cunning COP
'It's true that he is cunning'

In (37) the adjective *schlau* follows the copular verb *ist,* but in the complement in (38), the verb comes last. In Irish, many verbs have so-called 'dependent' forms which occur only in subordinate clauses and after a few verbal particles. For example, the main clauses

(39) *Tá sé* ina dhochtúir
COP he in his doctor
'He's a doctor'

(40) *Chonaic* Seán an mhuc
saw John the pig
'John saw the pig'

when embedded as complements become respectively:

(41) Tá a fhios agam *go* *bhfuil* *sé ina dhochtúir*
COP its knowledge at me COMP COP he in his doctor
'I know that he's a doctor'

(42) Tá a fhios agam *go* *bhfaca* *Seán an mhuc*
COP its knowledge at me COMP saw John the pig
'I know that John saw the pig'

In Wappo, the subjects of main clauses are marked with a suffix *-i* (Li and Thompson (1976a):

(43) Chic-i c'ic'a ţ'a-taʔ
bear-SUBJ bird kill-PAST
'The bear killed the bird'

(44) Ce k'ew- i tuc'a-khiʔ
that man-SUBJ big-PREDICATOR
'That man is big'

When sentences like these are embedded as s-like complements, their internal syntax doesn't change except that the subject marker *-i* cannot occur with the subjects of these clauses (*ʔah* is the irregular subject form of the first person pronoun):

(45) ʔah *chica c'ic'a ɬ'a-taʔ* haɬiskhiʔ
I bear bird kill-PAST know
'I know that the bear killed the bird'

(46) ʔah *ce k'ew tuc'a-khiʔ* haɬiskhiʔ
'I know that the man is big'

1.3.2 *Indicative versus subjunctive sentence-like complements*

In many languages there is more than one s-like complement-type. When such a distinction exists, the form that most closely resembles declarative main clauses is referred to as *indicative.* Non-indicative s-like complement types usually have a special non-indicative stem or conjugation ; they may also differ from indicatives in occurring with modal particles or special complementizers.

Non-indicative s-like complement types can be referred to by the semantically neutral term *subjunctive.* For a particular language, a term with more semantic content such as optative, irrealis, potential, etc. might be more appropriate. Indicative and subjunctive verbal forms are said to differ in *mood,* and there are rarely more than two s-like mood distinctions available in complement systems, though a number of languages have more than two mood distinctions available for use outside the complement system (see chapter III:5).

Indicative-subjunctive distinctions in complementation are attested in a number of language families. Only languages that distinguish tense and/or aspect in their verbal morphology, however, will be likely to have an indicative-subjunctive distinction.

English distinguishes an indicative from a (rather moribund) subjunctive in complementation. The subjunctive differs from the indicative only in the morphology of the verb. The indicative and subjunctive use the same complementizer, *that:*

(47) a. King Melvin suggested *that Natasha <u>was</u> drawn and quartered*

b. King Melvin suggested *that Natasha <u>be</u> drawn and quartered*

(48) a. I insisted *that Roscoe <u>lives</u> here*

b. I insisted *that Roscoe <u>live</u> here*

The (a) sentences above contain indicatives, while the (b) sentences contain subjunctives. In Lori, usually considered a dialect of Persian, the subjunctive has a prefix and a special conjugation distinguishing it from the indicative. As with English, the complementizer is the same (data from Stan Murai):

(49) Zine eteqad dar *ke* *pia* *tile-ye* *dozid*
woman belief have COMP man chicken-OBJ stole-3SG-INDIC
'The woman believes that the man stole the chicken'

(50) Zine væ pia xas *ke* *tile-ye* *be-doze*
woman from man wanted COMP chicken-OBJ 3SG-SJNCT-steal
'The woman wanted the man to steal the chicken'

In Rumanian, both the verb conjugation and the complementizer differ :

(51) El spune că *citeşte* *o carte*
he says COMP read-3SG-INDIC a book
'He says that he's reading a book'

(52) El vrea să *citească* *o carte*
he wants COMP read-3SG-SJNCT a book
'He wants to read a book'

In Russian, the subjunctive is identical in form to the indicative past tense. The complementizer is the same for both moods, but the subjunctive is always accompanied by the modal particle by:

(53) Ja verju, *čto* *Boris* *priďët*
I believe COMP Boris will come-INDIC
'I believe that Boris will come'

(54) Ja verju, *čto* *Boris* *prišël*
I believe COMP Boris came-INDIC
'I believe that Boris came'

(55) Ja ne verju, *čto* *by* *Boris* *prišël*
I NEG believe COMP sjnct PCL Boris come-SJNCT
'I don't believe that Boris will come/came'

As the Russian case illustrates, subjunctives tend to have fewer inflectional possibilities than indicatives. The complement in (55) is neutral to a future or past interpretation, though the predicate is marked for perfective aspect. Past and future reference in Russian is clearly marked on indicatives, however, as (53) and (54) show. Many of the tense distinctions associated with subjunctives in the literature turn out on closer inspection to be aspectual distinctions. In Classical Greek, for example, the indicative present and aorist contrast along both a time and an aspect dimension. The present is imperfective

and refers to time coextensive with the time of speaking; the aorist is perfective and refers to time prior to the act of speaking (Goodwin 1892, Smyth 1920);

(56) Speúdousi pròs tền kőmēn
hasten-3PL-PRES to the village
'They are hastening to the village'

(57) Éspeusan pròs tền kőmēn
hasten-PL-AORIST to the village
'They hastened to the village'

In the subjunctive, the tense distinction is lost and only the aspectual distinction remains between present and aorist:

(58) Efobeîto *mề speúdōsi pròs tền kőmēn*
afraid-3PL-IMPERF NEG hasten-3PL-PRES-SJNCT to the village
'He was afraid that they should be hastening to the village'

(59) Efobeîto *mề speúsōsi pròs tền kőmēn*
afraid-3SG-IMPERF NEG hasten -3PL-AORIST-SJNCT to the village
'He was afraid that they should hasten to the village'

In Bemba, the indicative distinguishes twenty-four tense-aspect categories (Givón 1971, 1972). In the subjunctive, only a restricted number of present and future distinctions is possible (some examples are provided in section 3.1.1.), all of which appear to be the products of tense copying. In fact, many tense distinctions exhibited by subjunctives are not independently meaningful, but are the result of tense-copying (*cf* section 2.6).

The subjunctive may also neutralize aspectual distinctions. In Lango the indicative has a three-way aspectual contrast, distinguishing a progressive, a habitual, and a perfective:

(60) Ákwànnò búk
read-3SG-PROG book
'He's reading a book'

(61) Kwánô búk
read-3SG-HABIT book
'He reads a book (all the time)'

(62) Òkwànò búk
read-3SG-PERF book
'He read a book (all the way through)'

In the subjunctive, these distinctions are neutralized:

(63) Dákô òdìò ìcó nî òkwǎl *búk*
woman pressed-3SG man COMP read-3SG-SJNCT book
'The woman pressed the man {to read a book (all the time)}'
{to read a book (all the way through)}'

On the other hand, the subjunctive may have as many inflectional categories as the indicative, as for instance in Ossetic (Abaev 1964).

One inflectional distinction follows from the definition of subjunctive complement as s-like: if the indicative has subject-verb or object-verb agreement, the subjunctive will almost invariably code these categories as well. Inflectional categories of subjunctives will be mentioned again briefly in section 1.3.4.

Subjunctives often bear some regular relation to another part of the verbal paradigm. The Russian example mentioned above where the subjunctive is morphologically identical to the past tense is rather atypical: the more usual pattern is that the subjunctive resembles the future tense form, as in the following example from Pashto:

(64) Zə *bə* dā kitā́b *vúlvaləm*
I PCL this book read-1SG-PERF-FUT
'I will read this book'

(65) Zə ğvā́rəm če *dā kitā́b vúlvaləm*
I want-1SG COMP this book read-1SG-PERF-SJNCT
'I want to read this book'

The future construction, unlike the subjunctive, requires the particle *bə*, but the verb forms are identical. Subjunctive and imperative paradigms are also frequently similar.

It seems that all languages with subjunctive complements can use subjunctives as main clauses (though the reverse may not be true: Irish has a somewhat rare subjunctive in main clauses that is not used in complementation). Main clause subjunctives tend to be used in modal, hortative, or imperative senses. Consider the contrast between indicative and subjunctive clauses in French:

(66) Dieu vous *bénit*
God you bless-INDIC
'God blesses you'

(67) Dieu vous *bénisse*
God you bless-SJNCT
'May God bless you'

Subjunctive main clauses may be accompanied by the subjunctive complementizer even though there is no overt complement-taking predicate accompanying the subjunctive, as in this example from Rumanian:

(68) *Să* continuăm
COMP continue-1PL-SJNCT
'Let's continue'

1.3.3 *Paratactic complements and verb serialization in complementation*
Parataxis and verb serialization may be used in complementation. These constructions have much in common syntactically:

1. Both consist of a subject NP followed by a series of verb phrases.
2. Each verb phrase contains a fully inflected verb.
3. No marker of coordination or subordination links the two verb phrases.
4. No special verb forms are used: if the first verb in the series is indicative, all the rest will be too.

There are a number of important differences between the two constructions, but only one, relating to the matter of one versus two assertions, has a direct bearing on their use in complementation.[4] In this section, only examples of parataxis will be given.[5]

In the paradigm cases of parataxis, the matrix clause and the paratactic complement each constitute clauses which could stand by themselves as independent sentences with approximately the same meaning. Below are some indicative-paratactic pairs from Lango:

(69) a. Dákô òkòbbì ìcɔ̂ *nî* *àtîn* *òkwɔ̀rɔ̀* *kál*
woman told-3SG-DAT man COMP child sifted-3SG millet
'The woman told the man that the child sifted millet'

b. Dákô òkòbbì ìcɔ̂ *òkwɔ̀rɔ̀* *kál*
woman told-3SG-DAT man sifted-3SG millet
'The woman said it to the man, he sifted millet'
(The woman told the man to sift millet (and he did))

(70) a. Ȧtîn òpòyò *nî* *dákô* *òkwɔ̀rɔ̀* *kál*
child remembered-3SG COMP woman sifted-3SG millet
'The child remembered that the woman sifted millet'

[4] The differences and similarities are discussed in some detail in Noonan and Bavin (1981) and Noonan (1992) and are briefly summarized in section 2.4.
[5] Examples of serialization are provided in Section 2.4. Paratactic complements are contrasted with other complement-types in Table 2.2.

b. Atîn òpòyò *òkwɔ̀rɔ̀ kál*
child remembered-3SG sifted-3SG millet
'The child remembered it, he sifted millet'
(The child remembered to sift the millet (and he did))

The (a) sentences above have indicative complements, the (b) sentences paratactic complements. In the (a) sentences there is an obligatory complementizer *ní,* and the complement includes its notional subject. In the (b) sentences, the complement consists of a verb phrase without a subject NP. The verb in these cases does not form a syntactic constituent with its notional subject, even in (69b) when the verb occurs next to it (*ìcɔ̂* 'man' in (69b) is the indirect object of *òkòbbì* 'she told it to'). The complementizer *nî* cannot occur with paratactic complements. In (69b) both *dákô òkòbbì ìcɔ̂* 'the woman said it to the man' and *òkwɔ̀rɔ̀ kál* 'he sifted the millet' can stand as independent clauses with approximately the same meaning as in the paratactic construction.

Paratactic complements are fairly common in sub-Saharan Africa, especially with CTPS whose complements are implied to be true, as is the case for many causative predicates, as in this example from Luo (Creider 1974):

(71) əmîyɔ ɔnyâŋgo orɪ·ŋgo
gave-1.SUBJ-3SG.OBJ Onyango ran-3SG
'I gave it to Onyango, he ran'
(I made Onyango run)

and immediate perception predicates, as in the following Hausa example:

(72) Nā̃ gán shì yánā̀ aikī̀
1-SG-PERF see him be at-3SG work
'I saw him, he is working'
(I saw him working)

Paratactic complements may occur in other environments as well, as in Diegueño (Langdon 1970):

(73) ʔənʸa· puy ʔəxap-x-vu əwa·rp-x
I there go-in-1SG-UNREALIZED SPECIFIC want-3PL.SUBJ-3SG.OBJ-UNREALIZED
uma·w
not-3PL
'I'll go in there, they won't want it'
(They won't want me to go there)

The predicates in paratactic constructions can typically be inflected for any verbal category that indicative complements can be inflected for. Further, paratactic com-

plements will typically agree with their CTPs in tense-aspect marking. See section 2.4 for discussion of this and other problems relating to parataxis in complementation.

1.3.4 *Infinitive complements*

The term 'infinitive' has been used for rather different sorts of syntactlc entities. The word 'infinitive' itself, meaning 'not limited' (*eg* by person, number, tense), would suggest itself for use with complement types that do not express inflectional distinctions. Such a classification of complement types into inflected versus non-inflected categories, however, would not provide a particularly useful classification. In this chapter the term will be used somewhat differently, referring instead to verb-like entities that do not bear syntactic relations to their notional subjects; *ie* their subjects do not take nominative case marking or condition verb agreement (where otherwise appropriate for subjects), nor are they marked in the genitive case, as a subject of a nominalization might be marked. The notional subjects of infinitives are typically equi-deleted (section 2.1), raised (section 2.2), or made objects of adpositions, as in (74):

(74) *For him to abandon Radical Syndicalism* would be terrible for the movement

But because infinitives are verb-like, the relations that they may establish with their objects (as in the phrase *abandon Radical Syndical*ism in (74)) are the same as those established by verbs in s-like complements .

Except for subject agreement (and mood), infinitives may be inflected for all verbal categories such as tense-aspect, voice, object agreement, etc. In most cases, however, infinitives, like subjunctives, are inflected for fewer of these categories than indicative complements in the same language. It seems possible to arrange verbal inflections (minus subject agreement and mood) along a scale like that in Table 2.1. It applies to all non-indicative complement types:

Table 2.1. *The relationship of verbal inflection to non-indicative complement types*

full range of tenses	past *vs* non-past (morphologically may correspond to the perfect/non-perfect distinction in the indicative)	aspect	voice, transitivity, causative desiderative, object agreement
1	2	3	4

Generally speaking, the further to the left an item is on this scale, the less likely it is to be coded on a non-indicative complement. The categories in set 4 are almost always coded on infinitive and subjunctive complements if they are coded on indicatives. (An exception is Hungarian, which has object agreement in verbs but lacks it in infinitives — [Edith Moravcsik, p.c.]). When infinitive and subjunctive complement types differ in the

number of inflectional categories they code, the s-like subjunctive will likely code more, but tense coding on subjunctives is more likely to be the product of tense copying (section 2.6).

Classical Greek provides an example of a language whose infinitives can code inflectional categories 1-4 in Table 2.1. Greek also illustrates another important point, namely that certain inflectional categories of infinitives may be manifested only in certain contexts. The Greek indicative in active voice is coded for the following tense-aspect categories: present, (past) imperfective, future, aorist (basically, a perfective past), (present) perfect, and pluperfect (= past perfect). The infinitive can be coded for all of these save imperfective and pluperfect. When infinitive complements are used for reported speech, their tense distinctions parallel in use their indicative counterparts:

(75) Fēsì *grápsai*
say-3SG write-AORIST-INF
'He says that he wrote'

(76) Fēsì *gegrafénai*
say-3SG write-PERF-INF
'He says that he has written'

(77) Fēsì *gráfein*
say-3SG write-PRES-INF
'He says that he's writing'

(78) Fēsì *grápsein*
say-3SG write-FUT-INF
'He says that he'll write'

Apart from their use in reported speech constructions, however, the future and perfect infinitives are rather rare (Goodwin 1892), and the present and aorist infinitives simply code aspect in the manner described for subjunctives in section 1.3.2. In English, the infinitive construction can code a past/non-past distinction, as well as aspect and voice. The past/non-past distinction is illustrated below:

(79) I believe Walt *to be a flat-earther*

(80) I believe Walt *to have been a flat-earther*

The morphology used for the past in (80) *(have* followed by a past participle) codes secondary or relative pasts (perfect tenses) in indicative clauses. In Russian, infinitives cannot be coded for tense, although tense categories are coded on verbs. Russian infinitives are, however, coded for aspect and voice. An aspect distinction coded on infinitives in Russian is illustrated below:

(81) Ja xoču *každyj den' igrat' na rojale*
I want every day play-IMPERF-INF on piano
'I want to play the piano every day'

(82) Ja xoču *sygrat' vam melodiju*
I want play-PERF-INF you-DAT tune
'I want to play you a tune'

In Lango, infinitives are not coded for tense or aspect, though aspect is an important category in indicative complements, but are coded for transitivity and orientation (which corresponds very roughly to voice: see Noonan 1992):

(83) Á̀mìttò *nènnò gwók*
want-1-SG see-TRANS-INF dog
'I want to see the dog'

(84) Á̀mìttò *nénô*
want-1SG see-INTRANS[SUBJ.ORIENTED]-INF
'I want to see'

(85) Á̀mìttò *nên*
want-1SG see-INTRANS[OBJ.ORIENTED]-INF
'I want to be seen/be visible'

The morphology of the infinitive construction may betray its origins in another grammatical category. In Jacaltec, for example, the infinitive is marked with the irrealis suffix *-oj*, but differs from the ordinary irrealis future in not taking subject agreement affixes (Craig 1977). In many languages, the infinitive shows clear signs of being derived from a nominal construction. This appears to be the case for most Indo-European infinitives, which derive historically from case-marked nominalizations (Buck 1933, Lehmann 1974, Jeffers 1975, Disterheft 1980). For this reason, complementizers with infinitives frequently derive from adpositions or articles.

Infinitive complement types resemble paratactic complements in many respects. Both are verb phrases that lack overt subject NPs. They differ in that paratactic complements can be inflected for subject agreement whereas infinitives cannot, and paratactic complements are syntactically not subordinate clauses whereas infinitives are and may, therefore, occur with a complementizer while paratactic complements may not. In languages that lack subject-verb agreement and do not have complementizers for infinitives, a problem may arise in deciding whether or not a given complement is an infinitive or a paratactic complement. For example, in Sre (Manley 1972) verbs are not conjugated for subject agreement. Since a complementizer does not occur in the following ex-

ample, the complements could be interpreted as either infinitives or paratactic complements.

(86) Kɔ̀n khay pal rəgəy təlɔ̀ŋ rɛ
child his must be able try swim
'His child has to be able to try to swim'

The complements in (86) would be interpreted as paratactic, however, only if each of the complements were capable of standing alone as an independent clause without substantial change of meaning for the whole. Since this is not possible in these cases, these complements are considered infinitives.

Infinitives are widely distributed across languages, though perhaps somewhat less commonly than nominalizations. They are frequently involved in clause-union phenomena (section 2.3).

1.3.5 *Nominalized complements*

Nominalized complements are, prototypically, predications with the internal structure of noun phrases. The predicate becomes nominalized, assuming the form of a verbal noun, and takes over the role of head noun of the noun phrase. The arguments may assume the status of genitives with the nominalized predicate as head noun. The nominalized predicate may occur with articles, case markers, adpositions, and in some cases may even be pluralized.

The relations that a nominalized predicate has with its arguments are the single most important feature distinguishing nominalizations from other sorts of complements. In a few cases, both notional subject and object may have a genitival relation with the nominalized predicate. English provides an example of this sort:

(87) *Algernon's shooting of the aardvark* drew international attention

The notional subject of the nominalized predicate *shooting is* coded in the genitive case, while the notional object establishes its genitival relation to the predicate by means of the preposition *of.* The more common situation, however, is that where only the subject bears a genitival relation to the predicate and the object is coded with the usual object marker. Uzbek provides an example of this sort (NZR = Nominalizer):

(88) Xɔtin bu *ɔdam-niŋ ǰoǰa-ni oğirla-š-i-ni* istadi
woman this man-GEN chicken-OBJ steal-NZR-3SG-OBJ wanted-3SG
'The woman wanted the man to steal the chicken'

The notional subject of *oğirla-* 'steal' is *ɔdam* 'man', which is marked in the genitive case with *-niŋ.* The *-i-* 'his', suffixed to the nominalized predicate *oğirla-š-,* reinforces the genitival relationship. The direct object of *oğirla-, ǰoǰa 'chicken'* takes the ordinary direct object marker. *Oğirla-š-i-* 'his stealing' as the direct object of *istadi* 'wanted', is

also marked with the direct object marker. In a few rare cases, the nominalized predicate may have a genitival relation only with its notional object. This situation holds in Irish, where the notional subject is either equi-deleted or raised:

(89) Is ionadh liom *Seán* a bhualadh Thomáis
cop surprise with me John comp hit-nzn Thomas-gen
'I'm surprised that John hit Thomas'

It is also possible for neither argument to bear a genitival relation to the nominalized predicate. In English, this situation occurs most frequently when the complement is an object of a preposition (see Visser 1973 for more examples and discussion):

(90) I disapprove of *children smoking pot*

Nominalized complements vary considerably as to the verbal categories they can retain, ranging from those that can express few verbal categories to those that retain all verbal categories. In Squamish, for instance, nominalized complements can retain all of the verbal inflections, clitics, and sentence particles found in main clauses. Compare (92) and (91) (Kuipers 1967):

(91) Na č-n wa c'aq'-an-umi
fact declar-1sg prog hit-trans-2sg.obj
'I was hitting you'

(92) č-n ɬč-iws kʷi n-s-na *wa c'aq'-an-umi*
declar-1sg tired-body art 1sg.poss-nom-fact prog hit-trans-2sg.obj
'I'm tired of hitting you'

In Squamish, all nominals, including proper nouns, are always accompanied by articles. Nominalized complements conform to this principle, taking the article *kʷi*.

Nominalized complements can also occur with nominal categories such as case markers and number inflections. In Turkish, case inflections are placed on verbal nouns according to the general principles for placement of case categories in the language. Briefly, the absolute codes non-specific direct objects, which, in the case of nominalized predicates, signals non-specific or imperfective aspect. The accusative case codes specific direct objects, or perfective nominalizations. The dative case is used for goals:

(93) *çalış-mak* istiyor
work-nzr-abs want-3sg
'He wants to work'

(94) *Ekmek al-mağ-ı unuttu*
bread take-nzr-acc forgot-3sg

'He forgot to get bread'

(95) *Yuru-meğ-e* başladık
walk-NZR-DAT began-1PL
'We began to walk'

Plural affixes are found on nominalized predicates in Ossetic (Abaev 1964), marking imperfective aspect:

(96) *Xæts-yn-tæ* sistoi̯ *kuyrttat-imæ*
fight-NZR-PL started-3PL Kurtatin-with
'They started to fight with the Kurtatins'

The form of a nominalization is more likely to be idiosyncratic relative to the verbal paradigm than is the verb-like infinitive, which will likely have a regular relation to the verbal paradigm.

Some of the points in this section are treated in greater detail in chapter III:7.

1.3.6 *Participial complements*

Participles are adjectival or adverbial[6] forms of verbs. The role of participles in complementation is usually limited even in languages that make extensive use of participles. The reason for this is that, in their role as adjectives, participles are not the heads of constructions, but rather modify some noun which functions as the head; therefore, in complementation as elsewhere, participles function as attributive, not predicate, adjectives. Since complements are, by definition, predications functioning as arguments of predicates and since predicates are the heads of predications, complements will normally be rendered as constructions having predicates as their heads, regardless of whether the head is rendered as a verb or as a noun. Thus participial complements, whose predicates are adjectivals modifying nouns, do not resemble prototypical complement structures. Because of their syntactic properties, participles will normally be used in complementation only when the special semantic properties of participles can be exploited (see sections 3.1.5).

The only place in complement systems where participles are regularly found is in complements to immediate perception predicates (section 3.2.12.) Here the object of the immediate perception predicate is head and the participle a qualifying clause.[7] Examples of such constructions can be found in Classical Greek:

(97) a. Eîde autòn *paúonta*
saw-3SG him-ACC stop-PART-PRES-MASC-PL-ACC

[6] The term 'converb' has recently come to be used in place of 'adverbial participle': see Haspelmath 1995, also Bickel 1998. In this chapter, the term 'converb' will only be used when referring to published work which employs the term.

[7] It is important to emphasize that these constructions are complement constructions and not relative constructions (see Kirsner and Thompson 1976 and section 3.2.12 for discussion of this point).

'He saw him stopping'

b. Eîde autòn *paúsanta*
saw-3SG him-ACC stop-PART-AORIST-MASC-SG-ACC
'He saw him stop'

(98) a. Eîde autèn *paúousan*
saw-3SG her-ACC stop-PART-PRES-FEM-SG-ACC
'He saw her stopping'

b. Eîde autèn *paúsāsan*
saw-3SG her-ACC stop-PART-AORIST-FEM-SG-ACC
'He saw her stop'

The pronouns *autòn* and *autèn* function as heads of their respective constructions, the participles agreeing with them in gender, number and case. The participles are also inflected for present and aorist tenses, and again these distinctions here are used only to reflect aspectual contrasts (*cf* section 1.3.2). Participles, in their role as complements to immediate perception predicates, do not have tense, but may encode aspectual distinctions. Participles may also code voice distinctions. Notice that the so-called present and past participles in English, when used as complements to immediate perception predicates, encode active and passive voice respectively:

(99) We saw the army *defeating* the enemy

(100) We saw the army *defeated* by the enemy

Both participles above are ambiguous between complement and relative interpretations.

There are some instances of participles being used as complements of CTPs other than immediate perception predicates. In Classical Greek, participles could also function as complements to predicates in reported discourse, as we see below:

(101) Éggellen autoùs paúontas
report-3SG them-ACC stop-PART-PRES-MASC-PL-ACC
'He was reporting that they were stopping'

(102) Éggellen autoùs paúsantas
report-3SG them-ACC stop-PART-AORIST-MASC-PL-ACC
'He was reporting that they stopped'

In cases like this, participles can code tense. In a few cases, participles are also found as complements to modal predicates, as is the Latin gerundive (Greenough 1903) and the

Hindu-Urdu gerundive (Bailey 1956). As a non-indicative complement type, participial complements follow the scale in Table 2.1 (section 1.3.4) in the verbal categories they encode.

Adverbial participles, which may head adverbial clauses (chapter II:4) may also be used as complements. They differ from adjectival participles in their inability to agree with any head noun. In Catalan adjectival participles agree with their head noun in number (Yates 1975):

(103) a. la classe *dirigent*
'the ruling class'

b. les classes *dirigents*
'the ruling classes'

The adverbial participle is used in Catalan as a complement to immediate perception predicates and is invariant:

(104) a. Vaig veure la dona *passant* per la duana
go-1SG see-INF the woman go-PART through ART customs
'I saw the woman go through customs'

b. Vaig veure les dones *passant* per la duana
go-1SG see-INF the women go-PART through ART customs
'I saw the women go through customs'

1.3.7 *Summary*

In the last few sections, characteristic features of the various complement types have been discussed and illustrated. Some of the more important features are summarized in Table 2.2.

Table 2.2. *Summary of complement types*

COMPLEMENT TYPE	PART OF SPEECH OF PREDICATE	SYNTACTIC RELATION OF SUBJECT TO PREDICATE	RANGE OF INFLECTIONAL CATEGORIES	OTHER CHARACTERISTICS
indicative	verb	same as main clause	same as main clause	s-like form (nearly) identical to declarative main clause
subjunctive	verb	same as main clause	typically reduced	s-like form that differs from declarative main clause — when main clause, often used in hortative or imperative senses.

paratactic	verb	predicate may agree with subject, but doesn't form constituent with it	same as indicative	interpreted as separate assertion; syntactically not a subordinate clause; can't take complementizer
infinitive	verb	predicate can't form constituent with subject	reduced; can't take subject-verb agreement	relations with object same as indicative
nominalization quent	noun	genitive relation between subject and predicate	reduced; may take nominal categories such as case and number	may have internal structure of NP; fre- gradation between nominalizations and infinitives
participle	adjective or adverb	subject is head, rest of predication is modifier	reduced; may take adjectival inflections when agreeing with subject	syntatically may conform to principles governing adjectives

2.0 The syntax of complementation

We have defined complementation as the grammatical state where a predication functions as an argument of a predicate. In contrasting this (universal) semantic characterization with the surface characteristics of sentences containing complements, a process terminology is useful, especially where cross-linguistic comparisons are made. In the sections that follow, we will use process terminology to describe *equi-deletion, raising,* and other semantic phenomena.

2.1 *Equi-deletion*

As discussed above, certain complement types may be truncated or reduced in the sense that certain components normally found in main clauses may be absent from them. Consider the following sentences:

(105) Zeke wants *Norma to plant the corn*

(106) Zeke wants *to plant the corn*

In (105), Zeke is the main clause (or matrix) subject, Norma the complement subject. In (106), Zeke is both matrix and complement subject, but notice that Zeke in (106) is not mentioned twice, corresponding to its two semantic roles. That is, we don't have a sentence like

(107) *Zeke$_i$ wants Zeke$_i$/him$_i$ to plant the corn

in place of (106). The second mention of *Zeke* has been deleted to produce (106) by a process known as equi-deletion. Equi-deletion (equi) deletes subjects of complements when they are coreferential with (*ie* refer to the same individual or thing as) some argument in the matrix. In (106) the complement subject has been equi-deleted under identity with the matrix subject.

It is possible to have equi-deletion under identity with matrix arguments other than the subject. In Irish, for example, objects of prepositions regularly condition equi:

(108) Ba mhaith liom theacht
would be good with me come-NZN
'I want to come'

The notional subject of *teacht* 'come' is deleted under identity with the pronominal portion of *liom* 'with me'. When the notional subject of the complement is not coreferential with a matrix argument, it is overt, like í in:

(109) Ba mhaith liom í a theacht
would be good with me her COMP come-NZN
'I want her to come'

In English, direct objects can condition equi in the case of three-place predicates like *force:*

(110) The woman forced the man to winnow the millet

In (110), the subject of the infinitive *to winnow* is deleted under identity with the direct object of *force, man*. [Causative predicates like *force* are understood to have three arguments: an agent, a patient, and a resulting state.]

The application of equi always results in a non-s-like complement type.

Languages can differ in the conditions under which equi can occur. English, as sentences (106) and (110) illustrate, allows equi under identity with either matrix subject or direct object. By constrast, Lango allows equi only under identity with subjects, never with direct objects:

(111) Dákô àmìttò *nî lócə̀ òryɛ̌t kál*
woman want-3SG COMP man winnow-3SG-SJNCT millet
'The woman wants the man to winnow the millet'

(112) Dákô àmìttò *ryɛ̀ttò kál*
woman want-3SG winnow-INF millet
'The woman wants to winnow the millet'

(113) Dákô òdìò lócà *nî* *òryɛ̌t* *kál*
woman pressed-3SG man COMP winnow-3SG-SJNCT millet
'The woman pressed the man to winnow the millet'

In (111), there is no coreference between matrix arguments and complement subject, so equi doesn't apply and the complement remains S-like (subjunctive). In (112), the notional matrix and complement subjects are coreferential, so the complement subject has been equi-deleted, resulting in a non-S-like complement (infinitive). In (113), a condition of coreference exists between matrix object and complement subject, but whereas the English example, (110), exhibits an infinitive (evidence that equi has applied), the Lango example retains a S-like (subjunctive) complement. In (113), *lócà* 'man' is not repeated as a noun in the complement clause under the usual conditions governing coreference in discourse. The complement predicate, however, is conjugated for a third person singular subject.

Some languages make very restricted use of equi. In Albanian, for example, neither identity with matrix object or subject normally conditions equi (data from Ferit Rustemi):

(114) Gruaja deshi *njeriu* *ta* *vjedhë* *pulën*
woman wanted-3SG man-NOM COMP steal-3SG-SJNCT chicken
'The woman wanted the man to steal the chicken'

(115) Njeriu deshi *ta* *vjedhë* *pulën*
man wanted-3SG COMP steal-3SG-SJNCT chicken
'The man wanted to steal the chicken'

(116) Gruaja e detyroi njeriun *ta* *vjedhë* *pulën*
woman PRO forced man-ACC COMP steal-3SG-SJNCT chicken
'The woman forced the man to steal the chicken'

In (114) *njeriu* 'man', the subject of the complement predicate *vjedhë* 'steal', is not coreferential with any argument in the matrix. In (115), the complement subject is elipted anaphorically and is represented by the third singular inflection on *vjedhë.* The complement subject, however, cannot be said to be equi-deleted in (115) because (i) the complement is still S-like (sentences do not require overt subject NPs in Albanian), and (ii) example (115) could mean either 'the man wanted to steal the chicken' or 'the man wanted *him* to steal the chicken', where 'man' and 'him' are not coreferential. The deletion of the second mention of *njeriu* with either gloss follows the usual discourse conditions on anaphoric ellipsis and is not the product of a sentence-internal process like equi. In (116), the complement is S-like, and equi has not (and could not have) applied even though a relation of coreference exists between matrix object and complement subject.

Equi-deletion is a common process, especially when conditioned by coreference of complement subject to matrix agent or experiencer (typically encoded as subjects, but note the Irish example, (108) above). Deletion under identity with other arguments is rarer. Where equi-deletion exists, it is usually obligatory.

Equi must be distinguished from other kinds of deletion, as indicated in the discussion above. In many languages, subject arguments (and all other arguments, for that matter) need not be overtly mentioned when their reference is clear from the discourse context. In the following sentence from Malay, for example,

(117) Saya měningat *bahwa sědang měnchuri ayam*
I remember COMP PROG steal chicken
'I remember that he was stealing the chicken'

the subject of the complement is not overt, nor is there any agreement affix in the predicate to reference it. This sentence would only be felicitious if it were clear from discourse context who the subject was. The deletion in this case has nothing to do with equi and the complement can be thought of as an independent sentence:

(118) Sědang měnchuri ayam
PROG steal chicken
'He was stealing the chicken'

(118) is a perfectly good sentence under the same conditions as (117). The conditions governing deletion in these cases are essentially the same as those governing pronominalization of arguments in English. Further, subjects may not be overt when they have a general or non-specific reference, as in:

(119) *Eating guavas is* fun

A non-s-like complement type occurs in English in these cases, but equi has not applied since conditions for coreference have not been met, *ie* there is no matrix argument which the subject can be identical to.

Brief mention should be made of the phenomenon variously known as *counter-equi* (Harada 1973) or *backward control* (Farrell 1995). Counter-equi is, essentially, a sort of reverse equi: an argument in the matrix is deleted under identity with an argument in a subordinate clause. Analyses making use of counter-equi are often controversial (Miyagawa 1999), but a number of cases have been reported in the literature: see Polinsky (1999) and especially Polinsky and Potsdam (2002) for references and discussion. However, even if we accept the validity of the phenomenon, cases requiring an analysis involving counter-equi are quite rare. Because of this, and because of the complexity of the arguments purporting to demonstrate instances of counter-equi, no examples will be given here. Analyses involving counter-equi have been proposed for phasal predi-

cates (Section 3.2.11), achievement predicates (Section 3.2.10), and manipulative predicates (Section 3.2.8).

2.2 Raised arguments

In addition to outright deletion via equi, there is another method whereby arguments may be removed from their predications resulting in a non-s-like complement type. This method involves the placement of an argument notionally part of the complement proposition (typically the subject) in a slot having a grammatical relation (*eg* subject or direct object) to the CTP. This movement of an argument from a lower to a higher sentence is called *raising.* Sentence (121) differs from sentence (120) in that raising has applied to (121), moving the complement subject into the matrix as direct object:

(120) Irv believes *Harriet* is a secret agent

(121) Irv believes *Harriet* to be a secret agent[8]

Harriet has a different grammatical status in (120) and (121). This is attested by the fact that when *Harriet* in (120) is pronominalized, the subject form *she* results, whereas when *Harriet* in (121) is pronominalized, the object form *her* appears:

(120′) Irv believes she is a secret agent

(121′) Irv believes *her* to be a secret agent

This is consistent with the view that Harriet is the subject of the complement verb *is* in (120) and has been raised to become the object of the matrix verb *believe* in (121). The sort of raising illustrated in (121), is called subject to object (Subj-Obj) raising.

We have conclusive evidence for raising when the putatively raised form is *semantically* an argument of the complement clause but *syntactically* a part of the matrix clause. For instance, *believe is* a two-place predicate; it takes as subject an experiencer argument and as object the thing believed. It's possible, however, to raise the subject of the object complement of *believe,* as in (121). But notice that the truth value doesn't change. What Irv believes is not *Harriet* (in fact he could distrust Harriet completely), but rather *that Harriet is a secret agent.* In other words, even though *Harriet* in (121) is the direct object of *believe,* and thus syntactically part of the matrix clause, semantically *Harriet* remains part of the complement, which is what Irv believes, just as in (120).

Now contrast the behavior of complements of *believe* with those of *force* in the following repeated examples:

(121) Irv believes Harriet to be a secret agent

[8] In this section all raised arguments are in italics.

(110) The woman forced the man to winnow the millet

These two sentences look superficially similar, but only in (121) do we conclude that raising has taken place; *force* is a three-place predicate, taking as argument an agent, a patient, and an argument which codes the action that results from the agent's manipulation of the patient. *Man* in (110) is already an argument of *force* and therefore is not raised to the matrix from the complement. In (110), the subject of the complement clause is deleted by equi.

Case marking can provide clues about raising. Where pairs of sentences exist such as (120') and (121'), the object case marking on *her* provides definitive proof of raising. (Note that the opposite sort of movement, 'lowering' of arguments, does not occur.) Even pairs of sentences from different languages can help establish a raising analysis. In comparing the Albanian sentence (114) with its English counterpart,

(114) Gruaja deshi *njeriu ta vjedhë pulën*
woman wanted-3SG man-NOM COMP steal-3SG-SJNCT chicken
'The woman wanted the man to steal the chicken'

(114') The woman wanted *the man* to steal the chicken

we note first the identity of meaning. Since the predicate-argument relation is a meaning relation, if *deshi* and *wanted* mean the same thing, they must have the same sort of arguments. Assuming they do mean the same thing, the sentences are comparable. The noun *njeriu* 'man' in (114) is coded in the nominative case. Albanian distinguishes a nominative *(njeriu)* from an accusative *(njeriun),* so the presence of the nominative in (114) is an indication that no raising has occurred. In (114'), man is not marked for case, but if *man* is replaced by a pronoun we get *him,* which is in the objective (= accusative) case. Words bearing the same semantic relation in Albanian and English, *man* and *njeriu* respectively, have different grammatical relations, and because of the object case marking on *him,* we can conclude that raising has taken place in English (but not Albanian). Needless to say, such comparisons must be used with great care. They provide hints rather than definitive proof. The ultimate proof comes from a comparison of the semantic analysis with the syntactic one in the manner described above.

When raising takes place, the complement appears in a non-s-like form, like the English infinitive, if such a form exists in the language. But notice that the existence of such forms *per se* is not proof for raising, as is the case in (110).

All the examples discussed so far involve Subj-Obj raising, but other sorts of raising exist as well. Complement subjects can also be raised to matrix subject position (Subj-Subj), as we see in comparing (122) with (123):

(122) It seems that Boris dislikes vodka

(123) *Boris* seems to dislike vodka

In (123), *Boris* has been raised from complement subject position to matrix subject position. There are also cases of raising from object position to subject (Obj-Subj) and from complement object to matrix object (Obj-Obj). Obj-Subj raising is illustrated below:

(124) It's tough for Norm to beat Herb

(125) *Herb* is tough for Norm to beat

Herb in (125) has undergone Obj-Subj raising. Obj-Obj raising does not occur in English, but is found in Irish:

(126) D'éirigh leis *iad* a thabhairt leis
rose-3SG with him them COMP bring-NZN with him
'He managed to bring them with him'

Iad 'them' has been raised from object position in the complement to object position in the matrix. The complement subject has been equi-deleted under identity with the pronominal form in *leis* 'with him' in the matrix. We know *iad* has been raised for a number of reasons, the most obvious of which is its position within the sentence. Irish is a VSO language, so objects ordinarily follow predicates:

(126') Thug sé leis iad
brought he with him them
'He brought them with him'

Yet in (126), *iad* precedes the predicate *thabhairt,* occupying the usual position for objects of the matrix verb *d'éirigh* 'rose'.

Raising may be optional (without apparent effect on the truth value), as in the English sentences above, or obligatory. In Irish, one argument from a nominalized complement is raised to object in the matrix. The subject will be raised unless it is equi-deleted, in which case the object is obligatorily raised:

(127) Is ionadh liom *é* a fheiceáil Sheáin anseo
COP surprise with me him COMP see-NZN John-GEN here
'I'm surprised that he saw John here'

(128) Is ionadh liom *Seán* a fheiceáil anseo
COP surprise with me John COMP see-NZN here
'I'm surprised to see John here'

In (127), the subject is raised into the matrix. It is then coded by the object form *é* 'him', rather than the subject form *sé* 'he'. In (128), the subject has been equi-deleted and the

object *Seán* has been raised. In English there are a few CTPs for which Subj-Obj raising is obligatory. When the subject of the complement of *want is* not equi-deleted, it must be raised into matrix object position:

(129) *I want that the man steal the chicken

(130) I want *the man* to steal the chicken

In (129), no raising has occurred and the sentence is ungrammatical. Many languages, however, would translate (130) with a form resembling (129), *eg* Lango:

(131) Ámìttò nî lócà òkwǎl gwɛ̀nò
want-1SG COMP man steal-3SG-SJNCT chicken
'I want the man to steal the chicken'

where lócà 'man' remains the subject of *òkwǎl* 'steal' since Lango does not allow Subj-Obj raising. English, on the other hand, does not allow Obj-Obj raising, which, as illustrated above, is possible in Irish.

Cross-linguistically, raising is not nearly as common as equi. Many languages do not employ any sort of raising at all (excluding from consideration here instances of clause union discussed in section 2.3). Perhaps the most common sort of raising is Obj-Subj, although this occurs only with evaluative CTPs such as *good, bad* and *hard.* The exact number of these evaluative CTPs that can trigger Obj-Subj raising will vary from language to language. English allows a rather open set of evaluative predicates to trigger Obj-Subj raising, whereas Lango allows Obj-Subj raising only with *bɛ̀r* 'good' :

(132) *Twòl* bɛ̀r àcámâ
snake good for.eating
'Snake is good to eat'

(133) *Twòl ràc àcámâ
'Snake is bad for.eating'

(134) *Twòl tɛ̀k àcámâ
'Snake is hard for.eating'

When arguments are raised, they assume the grammatical role (*eg* subject or object) that would ordinarily be held by the complement to which they notionally belong. In (135)

(134) Floyd wants *Zeke* to drive

the raised argument *Zeke is* the direct object of *wants* and has heen raised from an object complement of *wanls.* Similarly, in

(136) *Roscoe* seems to be a moonshiner

Roscoe has been raised from the subject complement of *seems,* which in turn has been extraposed to sentence-final position.[9]

2.3 Incorporation of reduced complements into the matrix

Any complement type that has fewer syntactic and inflectional possibilities than an indicative main clause, can be referred to as a *reduced* complement. s-like indicative complements are, by definition, non-reduced. The reduced complements considered so far retain some characteristics of independent clauses. For instance, the predicate in the complement may continue to govern a set of grammatical relations independent of those governed by the embedding verb. In the sentence

(137) Nell made Dudley test the wort

Dudley is the direct object of *made,* while the infinite complement t*est the wort* functions as the factitive object[10] of *made; wort is* the direct object of *test.* (137) illustrates two levels of grammatical relations governed by the matrix and complement predicates respectively, displayed as Figure 2.1.

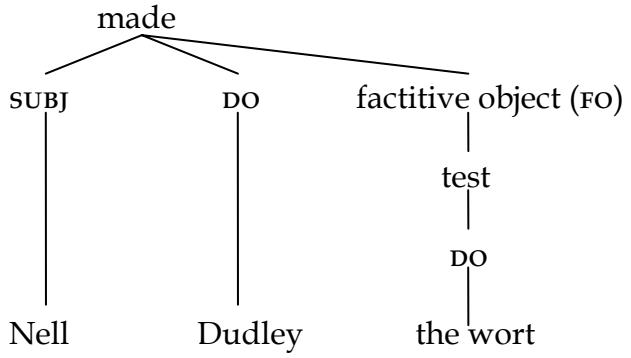


Figure 2.1 Two levels of grammatical relations

The notional subject of *test* has been equi-deleted under identity with the direct object *Dudley.* (137) and Figure 2.1 illustrate a variety of clause reduction where the complement predicate can maintain grammatical relations of its own, independent of the

[9] See section 2.5 and Johnson (1977) for more discussion of this phenomenon. The syntax of raising in English is discussed in Postal (1974). Steever (1977) discusses the semantic consequences of raising in English.

[10] Factitive objects are found with three-place, manipulative predicates, where they represent the state or action brought about by the subject's activity on the direct object.

grammatical relations determined by the matrix verb. We will call this sort of clause reduction *simple clause reduction* (SCR). There is another variety of clause reduction which we will call *clause union* (CU) where the matrix and complement predicates share one set of grammatical relations. A few CTPs in French offer a contrast between SCR and CU. One such is *laisser* (French data from Mathias 1978 and Beaubien, Sabourin and St-Amour 1976):

(138) a. Roger laissera Marie marcher
Roger let-3SG-FUT Marie walk-INF
'Roger will let Marie walk'

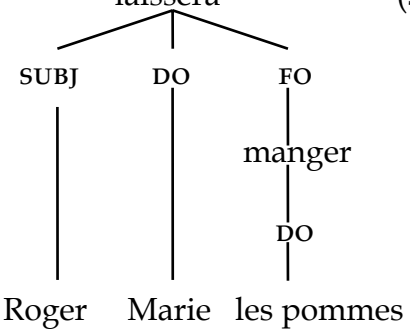
b. Roger laissera Marie manger les pommes
Roger let-3SG-FUT Marie eat-INF the apples
'Roger will let Marie eat the apples'

(139) a. Roger laissera marcher Marie
Roger let-3SG-FUT walk-INF Marie
'Roger will let Marie walk'

b. Roger laissera manger les pommes à Marie
Roger let-3SG-FUT eat-INF the apples to Marie
'Roger will let Marie eat the apples'

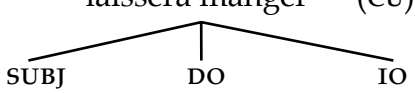
The sentences in (138) illustrate SCR, while those in (139) illustrate CU. Contrast (138b) with (139b): in (138b), both *laissera* and *manger* have direct objects, *Marie* and *les pommes,* respectively. In (138b) the matrix and complement clauses have been merged to the degree that only one set of grammatical relations is shared between them. The grammatical relations in (138b) and (139b) can be displayed graphically in Figure 2.2.

(138b)



(SCR)

(139b)



(CU)

Figure 2.2 The two levels of grammatical relations in (138b) and (139b)

In (139b) the predicates of the matrix and complement predications have been merged and one set of grammatical relations is shared between them. *Marie,* the DO of *laissera* in (138b) becomes the indirect object of the merged predicate *laissera manger as* indicated by the indirect object marker *à,* while *les pommes* becomes the DO of the merged predicate. A full set of grammatical relations would include SUBJ, DO, IO, FO, and oblique object OO.[11] In a set of grammatical relations, there can be only one SUBJ, DO, IO, and FO, though there may be more than one OO.[12] In CU, the arguments of two notional predications must be made to conform to one set of grammatical relations. In the typical case, the SUBJ of the CTP will retain its grammatical role, as will the DO, IO, etc. of the complement predication. The DO of the CTP must take on the highest-ranking grammatical relation not filled by another argument in the merged predication. In (139b), this argument takes on the role of IO since the DO slot is already filled. If the IO slot is already filled, as in (140),

(140) Roger laissera Marie donner les livres *à Jean*
Roger let-3SG Marie give-INF the books to John
'Roger will let Marie give the books to John'

CU will result in the DO of the CTP *laissera* becoming an OO as in (141):

(141) Roger laissera donner les livres à Jean *par Marie*
Roger let-3SG give-INF the books to John by Marie
Roger will let Marie give the books to John

In sum, the hierarchy for determining the grammatical role of the notional DO of the CTP in CU is as follows: [13]

(142) DO
IO
OO (often, though not invariably, expressed as a passive agent)

---

[11] It may be that some languages make no use of grammatical relations (Schachter 1976, Noonan 1977). Even among the great majority that do, IO and FO may not function as distinct grammatical relations. See chapter I:2.

[12] See, however, Gary and Keenan (1977) for a discussion as to whether there can be more than one direct object.

[13] See Comrie (1976), Johnson (1977), Aissen and Perlmutter (1976), and Polinsky (1995) for more discussion of this phenomenon. For a discussion relevant to all aspects of CU and lexical union, see chapter III:6.

A more radical form of CU is *lexical union* (LU). LU results in the merged predicates forming a single lexical unit ; the CTP typically is represented as an affix on the (notional) complement predicate. As an example of LU, consider the following sentences from Georgian:

(143) a. Is movida
he came
'He came'

b. Me mas movatanine
I him come-CAUSE
'I made him come'

(143b) represents an instance of LU where the predicates meaning 'come' and 'cause' have been merged into a single lexical unit. The distribution of grammatical roles in LU follows the same general principles as for other forms of CU.[14]

Many languages make rather extensive use of CU. Lahu is a case in point, where a very high percentage of cases of complementation will involve CU or, more rarely, LU. Below is a complex sentence from Lahu involving multiple CU and an instance of LU (Matisoff 1973):

(144) ɔ̀e yâmî thàʔ ɔyâpā thàʔ mɛ́ni thàʔ ɔ̄ cā cɨ tu
mother daughter OBJ son OBJ cat OBJ rice eat CAUSE UNREALIZED
te ve
CAUSE NOM
'The mother had her daughter make her son feed the cat rice.'

All of the arguments save the highest subject *ɔ̀e* 'mother' and the lowest object *ɔ̄* 'rice' are accompanied by the marker *thàʔ* in apparent violation of the principles summarized above. *Thàʔ* however, is not really a DO marker, but rather accompanies human non-subjects and focused constituents. The grammatical role of non-subjects is normally not marked on nouns, but is, rather, inferred from the sort of real-world object the argument represents and the sort of verbs present in the verbal complex.

2.4 *Parataxis and serialization*

Along with their syntactic similarities (section 1.3.3), paratactic and serial constructions have similar semantic ranges. Both, for instance, can be found in causative and immediate perception constructions. The two constructions differ in a number of respects, which can only be summarized here:[15] verbs in serial constructions have obligatory

[14] See Shibatani (1976) for discussion of the syntax and semantics of LU.

[15] Discussed in Noonan and Bavin (1981) and Noonan (1992). Serial constructions are discussed in Stahlke (1970), Bamgbose (1974) , George (1976), and Lord (1993).

agreement in tense-aspect,[16] whereas paratactic constructions do not. For instance in Gã, the following tense-aspect distinctions are available:

(145) a. Mìbà (past)
come-1SG-PAST
'I came'

b. Míbà (perfect)
come-1SG-PERF
'I have come'

c. Míbàà (habitual)
come-1SG-HABIT
'I come'

In serial constructions, person and tense-aspect distinctions like those illustrated above will be found on each verb in the series:

(146) a. Mìnyɛ́ mìbà (past)
be able-1SG-PAST come-1SG-PAST
'I was able to come'

b. Mí'nyɛ́ míbà (perfect)
be able-1SG-PERF come-1SG-PERF
'I have been able to come'

c. Mínyɛ́'ɔ́ míbàà (habitual)
be able-1SG-HABIT come-1SG-HABIT
'I'm able to come'

Further, each clause may be independently negated in parataxis whereas with serials only one negative is allowable and has the entire construction within its scope. In parataxis, each verb may have a different subject, as in this Lango example:

(147) Ìcɔ̂ òdìá àcégò dɔ́ggɔ́lâ
man pressed-3SG.SUBJ-1SG.OBJ closed-1SG.SUBJ door
'The man pressed me, I closed the door'
(The man forced me to close the door)

With serials, there is only one grammatical subject, whatever the semantic subject of the following verbs may be, as in the following Akan example (Schachter 1974: 258):

[16] Exceptions have been noted by Bamgbose (1974:27).

(148) Mede aburow migu msum
take-1SG corn flow-1SG in water
'I caused the corn to flow into the water' or
'I poured the corn into the water'

Clearly, *aburow* 'corn' is the semantic subject of 'flow', yet the verb takes first person concord.

The syntactic differences noted above correlate with a crucial semantic difference, namely that paratactic constructions contain two assertions, *ie* each clause is separately asserted, whereas serial constructions contain just one, encompassing the entire construction. In this way, serial constructions resemble more ordinary sentences with subordinate clauses. Independent aspect marking and negation would seem a necessary consequence of a clause that constitutes a separate assertion, as would a lack of obligatory subject agreement. The two-assertion aspect of parataxis will be discussed in section 3.1.4.

One criterial characteristic of both serial and paratactic constructions is that only the first verb in the series can have an overt subject NP, *ie* serial and paratactic constructions consist of a subject NP and its verb phrase, followed by one or more verb phrases. The notional subject of each verb following the first is represented only by subject-verb agreement, and is coreferential with either the subject or object of the preceding verb or the first verb in the series. But unlike the infinitive which is also subjectless, the verb in the paratactic complement is fully inflected for person and tense-aspect if these are inflectional categories in the language. Paratactic and infinitive complement types contrast in Lango:

(149) Án àpóyò àcégò dɔ́ggɔ́lâ (paratactic)
I remembered-1SG closed-1SG door
'I remembered it; I closed the door'
(I remembered to close the door)

(150) Án àpóyò cèggò dɔ́ggɔ́lâ (infinitive)
I remembered-1SG close-INF door
'I remembered to close the door'

In (149), the second predicate *àcégò* is fully inflected for person and tense-aspect. In (150), the second predicate *cèggò* 'to close' is an infinitive, inflected neither for person nor tense-aspect.

In the sentence

(151) Dákô òdîò ìcô òkwàlò gwɛ̀nò
woman pressed-3SG man stole-3SG chicken
'The women pressed the man; he stole the chicken'

(The woman forced the man to steal the chicken)

the noun *ìcɔ̂* 'man is notionally the object of *òdɪ̀ò* 'pressed' and the subject of ò*kwàlò* stole', but from a syntactic point of view, it functions only as the object of *òdɪ̀ò*. This is crucial for the claim that serial and paratactic complements never have overt subject NPs. There are two simple demonstrations of the syntactic status of *ìcɔ̂* in (151). First, when *ìcɔ̂* is pronominalized, the verb *òdɪ̀ò* is inflected for third person singular object, as in:

(152) Dákô òdɪ́ɛ́ òkwàlò gwɛ̀nò
woman pressed-3SG.SUBJ-3SG.OBJ stole-3SG.SUBJ chicken
'The woman forced him to steal the chicken'

Note that the object suffix *-ɛ́* differs from the subject pronoun *ɛ́n* 'he, she'. Pronominalized direct objects in Lango appear as object affixes replacing the final *-ò*, but pronominalized subjects can appear only as inflections in the verb or can appear as a subject pronoun accompanled by the subject agreement inflection. If *ìcɔ̂* in (151) is pronominalizcd by either of the techniques available for subjects, the result is ungrammatical:

(153) *Dákô òdɪ̀ò òkwàlò gwɛ̀nò
woman pressed-3SG stole-3SG chicken
'The woman forced him to steal the chicken'

(154) *Dákô òdɪ̀ò ɛ́n òkwàlò gwɛ̀nò
woman pressed-3SG he stole-3SG chicken
'The woman forced him to steal the chicken'

((153) is grammatical with the reading 'The woman forced it to steal the chicken'.) Second, the tonal contour of ò*kwàlò* 'stole' in (151) supports the interpretation of *ìcɔ̂* as the syntactic object of *òdɪ̀ò* but not the syntactic subject of ò*kwàlò*. In the third person singular perfective, the inflection of the verb varies depending on whether or not the verb is accompanied by an overt subject pronoun. In a word like *òkwàlò* the tone will be high (˝) on the second syllable if the verb is accompanied by an overt pronominal subject, but low (ˆ) if the verb is not accompanied by an overt pronominal subject. This is not a matter of tone sandhi, but is a grammatically conditioned feature. These patterns are illustrated below:

(155) ɛ́n òkwálò gwɛ̀nò
he stole-3SG chicken
'He stole the chicken'

(156) òkwàlò gwɛ̀nò

stole-3SG chicken
'He stole the chicken'

In (155) the tone pattern on the verb is ò*kwálò* with a high tone on the second syllable because of the overt pronominal subject *én*, while in (156) the tone pattern is *òkwàlò*, with a low tone, because of the lack of an overt pronominal subject. This tone alternation is found in subordinate clauses too, as illustrated below:

(157) Dákô òtàmò nî én òkwálò gwɛ̀nò
woman believed-3SG COMP he stole-3SG chicken
'The woman believed that he stole the chicken'

(158) Dákô òtàmò nî òkwàlò gwɛ̀nò
woman believed-3SG COMP stole-3SG chicken
'The woman believed that he stole the chicken'

In the paratactic construction, repeated here below,

(159) Dákô òdìɛ́ òkwàlò gwɛ̀nò
woman pressed-3SG.SUBJ-3SG.OBJ stole-3SG.SUBJ chicken
'The woman forced him to steal the chicken'

the tonal pattern of ò*kwàlò* is clearly the same as in (156) and (158) where the verb lacks an overt nominal subject. So, despite the presence of its notional subject immediately before it, ò*kwàlò* behaves tonally as though it had no overt nominal subject, so the pronoun -ɛ́ is indeed the syntactic object of *dɪ-* 'press'.

From the standpoint of complementation, many aspects of the syntax and semantics of paratactic constructions resemble those of adjacent and logically connected sentences in discourse, rather than the main predicate-subordinate relationship that otherwise obtains in complementation. For instance, (149) could well be rendered in English as

(160) I remembered it; I closed the door

and (151) as:

(161) The woman pressed the man; he stole the chicken.

and perhaps do more justice to the semantic and grammatical relations involved in those sentences than the somewhat more idiomatic translations given above. It should be noted, however, that from a phonological point of view, (149) and (151) are single sentences. They have an intonational contour like that of single sentences, and rules of

external sandhi that do not operate across sentence boundaries operate within paratactic constructions (Noonan and Bavin 1981, Noonan 1992).

Another manifestation of the difference between paratactic complements and other sorts of complements in Lango has to do with the possibility for utilizing 'switch-reference' morphology (Haiman & Munro 1983). In ordinary subordinate clauses, both indicative and subjunctive, a verb inflected for third person must have a prefix indicating whether the subject of the subordinate clause is the same or different from the subject of the CTP. In the third person singular perfective, the prefix indicating same subject (SS, non-switch reference) is *è-*, and the unmarked prefix indicating a third person singular subject (which can be interpreted as switch reference) is *ò-*. These are illustrated below:

(162) Dákô òpòyò nî ècégò dɔ́ggɔ́lâ
woman remembered-3SG COMP closed-3SG.SS door
'The woman remembered that she closed the door' (non-switch reference)

(163) Dákô òpòyò nî òcègò dɔ́ggɔ́lâ
woman remembered-3SG COMP closed-3SG door
'The woman remembered that he/she closed the door' (switch-reference)

In (162), the subject of *ècégò* must be interpreted as *dákô* 'woman' while in (163), the subject of ò*cègò* must be interpreted as being someone other than the woman. This opposition is available only in subordinate clauses. Since the switch reference prefix *ò-* is phonologically identical to the ordinary main clause third person singular perfective prefix *ò-*, (164) is a possible sentence,

(164) Ocègò dɔ́ggɔ́lâ
closed-3SG.SUBJ door
'He closed the door'

whereas (165) is not:

(165) *ècégò dɔ́ggɔ́lâ
closed-3SG.SUBJ door
'He closed the door'

The prefix *è-* indicating non-switch reference is possible only in subordinate clauses, and is not found in adjacent sentences in discourse. So the English

(166) The woman hit the man. She ran away

where the subject in both clauses is the same, as in (162), cannot be rendered by

(167) *Dákô òjwàtò ìcɔ̂. èŋwɛ́cò

woman hit-3SG.SUBJ man ran away-3SG.SS
'The woman hit the man. She ran away'

where the second verb *èŋwécò* has the non-switch reference prefix *è-*, but can be rendered by

(168) Dákô òjwàtò ìcɔ̂. Òŋwècò

where the second verb has the *ò-* prefix. (168) can also mean:

(169) The woman hit the man. He ran away

Paratactic constructions resemble in this respect constructions like (168) more than other complement constructions like (162) and (163), since switch reference morphology is not available in parataxis. The sentence

(170) *Dákô òpòyò ècégò dɔ́ggɔ́lâ
woman remembered-3SG.SUBJ closed-3SG door
'The woman remembered to close the door'

is ungrammatical because of the *è-* non-switch reference prefix on *ècégò*, even though the subjects of ò*pòyò* and *ècégò* must be interpreted as being coreferential. The meaning of (170) would have to be rendered by

(171) Dákô òpòyò òcègò dɔ́ggɔ́lâ
woman remembered-3SG.SUBJ closed-3SG.SUBJ door
'The woman remembered to close the door'

where the form ò*cègò*, which in true subordinate clauses indicates switch reference, is used in this case where the subjects must be interpreted as coreferential .

2.5 ***Distribution of complements within sentences***

As we have seen, complements function as subjects or objects. They are usually positioned in sentences just like other subjects or objects, but in many languages there are strong preferences, or even outright constraints, on the distribution of complements that result in different distributional patterns for complements than for other grammatical structures filling the same grammatical roles. For instance, the nominalized complement in English can occur in subject position in both declarative and interrogative sentences:

(172) a. Floyd's leaving town is significant

b. Is Floyd's leaving town significant?

The s-like complement type in English, however, may occur in subject position in declarative sentences, but not in interrogative sentences that are formed by placing an auxiliary element in sentence-initial position:

(173) a. That Floyd left town is significant

b. *Is that Floyd left town significant?

Restrictions on the distribution of complement types are, in fact, quite widespread in English:[17]

(174) a. I believe *John's having left* to have upset you

b. *I believe *that John left* to have upset you
(*cf* That John left has upset you)

(175) a. *For John to be executed* would be regarded by many people as outrageous

b. *Many people would regard *for John to be executed* as outrageous

Constraints on the distribution of complement types normally take the form of restrictions against the placement in sentence-initial, or, more commonly, in sentence-medial position of complements whose heads are verbs. Languages may deal with such restrictions by making use of ordinary word-order possibilities or by employing special constructions which, typically, remove s-like complements to the end of a sentence. The process of moving a complement to the end of a sentence is called 'extraposition'. This process is syntactically distinct from ones such as passive involving arguments other than complements. Complements moved to the end of the sentence are referred to as 'extraposed'.

The example (173b) violates the constraint in English against having complements with verbal heads in medial position; however, this sentence can be rendered grammatical by extraposition, as in (176):

(176) Is it significant that Floyd left town?

Notice that in (176), the complement has been removed to sentence final position and its original place in subject position taken over by the pronoun *it*. Replacement of the extraposed complement by a proform is not found in all languages.

In a few cases, extraposition seems to be obligatory, even though the non-extraposed sentence would not violate the ordinary constraints on the placement of

[17] Examples are from Grosu and Thompson (1977), which should be consulted for more discussion of this phenomenon in English and other languages.

complements. In such cases, extraposition is governed by the CTP. In English, the predicates *seem* and *appear* have obligatory extraposition of their subjects:

(177) a. *That Floyd is drunk seems to me

b. It seems to me that Floyd is drunk

c. *That Floyd is drunk appears to me

d. It appears to me that Floyd is drunk

Extraposition normally has the effect not only of removing the complement from its grammatical position, but also of depriving it of its grammatical role. In the sentence

(178) It is known to everyone that Zelda wrote *War and Peace*
(*cf* That Zelda wrote *War and Peace* is known to everyone)

the extraposed clause no longer functions as the subject. Evidence for this includes the fact that *it* can be raised like a subject (as in (179a)) and equi-deleted like a subject (as in (179b)):

(179) a. I want *it* to be known to everyone that Zelda wrote *War and Peace*
b. It is unlikely to be known to everyone that Zelda wrote *War and Peace*
(*cf* It is unlikely that *it* is known to everyone that Zelda wrote *War and Peace*)

In Irish, extraposition from subject is virtually obligatory. In the example below, a pronominal copy *sé* is left in subject position:

(180) Bhí *sé* curtha amach *go* *raibh Ruarí anseo arís* *ag ól*
was it put-PART out COMP was Rory here again at drink-NZN
'It was rumored that Rory was here drinking again'

Extraposition in (180) is obligatory since Irish requires all s-like complements to occur in sentence-final position. The next example illustrates extraposition from subject when the subject complement is already in sentence-final position:

(181) Breathnaíonn sé *go* *bhfuil eolas* *aige* *air*
seems it comp is knowledge at him on it
'It seems that he knows about it'

In this sentence, there is only one overt argument of *breathnaíonn* and it is represented both by *sé* 'it' and the complement clause of which *sé* is a cataphoric copy.

So far we have only considered extraposition from subject, but extraposition from object is also found and is reasonably common especially in the SOV languages of the Middle East, for example Persian, Armenian, and Uzbek. Eastern Armenian, an SOV language, has a constraint like that of Irish (VSO), requiring S-like complements to occur in sentence-final position. The ordinary SOV word order of Eastern Armenian is illustrated in (182) (data primarily from Galust Mardirussian):

(182) Mard-ə hav-ə gojats^{h}av
man-the chicken-the stole
'The man stole the chicken'

S-like object complements, however, do not occur preverbally as objects normally would, but rather are extraposed to sentence-final position:

(183) Kənik-ə imanuma *vor mard-ə hav-ə gojats^{h}av*
woman-the knows COMP man-the chicken-the stole
'The woman knows that the man stole the chicken'

In Persian (SOV), S-like complements, both indicative and subjunctive, must be extraposed, but reduced complements may only be extraposed when, as nominalizations, they are objects of prepositions (data primarily from Zohreh Imanjomeh):

(184) a. Æli goft *ke Babæk bimar æst*
Ali said-3SG COMP Babak sick is
'Ali said that Babak is sick'

b. *Æli *ke Babæk bimar æst* goft
(Extraposition is obligatory with S-like complements)

(185) a. Mæn šoru? *be avaz xand-æn* kærdæm
I beginning to song recite-NZR did-1SG
'I began to sing'

b. Mæn šoru? kærdæm *be avaz xand-æn*
(Extraposition possible with nominal complements which are objects of prepositions)

(186) a. Mæn *adæd-æn-e Babæk-ra* færman dadæm
I come-NZR-ASSOC Babak-OBJ order gave-1SG
'I ordered Babak to come'

b. *Mæn færman dadæm *adæd-æn-e Babæk-ra*

c. *Mæn Babæk-ra færman dadæm *adæd-æn(-e)*
(Extraposition not possible with nominalized complements unless they are objects of prepositions)

In Uzbek, also SOV, extraposition is only possible with S-like complements. The language distinguishes extraposed complements with the optional complementizer *ki* from non-extraposed complements with *deb* 'saying'. These latter complements are used in reported discourse (data from Abduzukhur Abduazizov):

(187) a. Men bu ɔdam-niŋ ǰoǰa-ni oğirla-gan-i-ni bilaman
I this man-GEN chicken-OBJ steal-NZR-3SG.POSS-OBJ know-1SG
'I know that this man stole the chicken'
(Nominalized complement, extraposition not possible)

b. Men bilamen ki bu ɔdam ǰoǰa-ni oğirladi
I know-1SG COMP this man chicken-OBJ stole-3SG
'I know that this man stole the chicken'
(Extraposition obligatory with this sort of S-like complement)

c. Xɔtin bu ɔdam ǰoǰa-ni oğirladi deb dedi
woman this man chicken-OBJ stole-3SG saying said
'The woman said that this man stole the chicken'
(Extraposition not possible with this sort of S-like complement)

In SOV languages, extraposition is usually related to the possibility for postposing other sorts of sentence elements, typically oblique arguments. Extraposition need not, however, be accompanied by such a possibility. Uzbek seldom postposes oblique arguments but extraposes S-like complements frequently.

Another topic that must be mentioned here is the parenthetical use of predicates, such as *believe, think, suppose,* and *regret.* In their non-parenthetical use, these verbs express positive propositional attitudes to the proposition embodied in their complement (see sections 3.1.2 and 3.2.2). Such a use is illustrated below:

(188) Floyd believed that radical syndicalism is the best form of government

In stating (188), one would most likely be making an assertion about what Floyd believed and not one about one's own attitude toward radical syndicalism. It is possible, however, to use *believe* parenthetically in such a way that the assertion is invested in the complement, especially with a first person singular subject and verb in the present tense. When used parenthetically, the position of the CTP is freer than usual: the CTP and its subject may be placed initially or after any major sentence constituent:

(189) I believe radical syndicalism is the best form of government

(190) Radical syndicalism is, I believe, the best form of government

(191) Radical syndicalism is the best form of government, I believe

In one possible interpretation of (189) and in the most likely interpretations of (190) and (191), *believe* is used parenthetically; the main assertion constitutes a claim about radical syndicalism and not a statement about one's beliefs as such. The function of the parenthetical verb in these sentences is 'to modify or weaken the claim to truth that would be implied by a simple assertion'.[18]

The syntactic effect of the parenthetical use of the CTP is to make the complement the main clause. Notice that the complementizer *that,* normally optional with *believe,* cannot be used when the CTP is used parenthetically:

(192) *That radical syndicalism is, I believe, the best form of government

(193) *That radical syndicalism is the best form of government, I believe

This is true also of languages where the use of the complementizer is ordinarily obligatory. Indicative complements in Lango are always accompanied by the complementizer *nî* except when the CTP is used parenthetically, in which case *nî* is not used. Only affirmative predicates can be used parenthetically, so with a negative predicate the complementizer cannot be ommited:

Negative predicates: parenthetical use not allowed

(194) Pé àtámô nî Òkélò dàktàl
NEG believe-1SG COMP Okello doctor
'I don't believe that Okello is a doctor'

(195) *Pé àtámô Òkélò dàktàl
'I don't believe that Okello is a doctor'

Parenthetical uses of affirmative predicates

(196) Àtámô Òkélò dàktàl
believe-1SG Okello doctor
'I believe Okello is a doctor'

(197) Òkélò, àtámô, dàktàl
'Okello, I believe, is a doctor'

[18] Urmson (1963); discussed also by Wittgenstein (1953), Hooper (1975), and Thompson (2002).

(198) *nî Òkélò, àtámô, dàktàl

So far as I am aware, all languages can use predicates like *believe* parenthetically, but not all languages allow for the movement of the CTP and its subject into the complement clause. Irish, for instance, does not seem to allow either the deletion of the complementizer or the movement of the parenthetical into the complement clause:

(199) Is eagal liom go bhfuil an bás aige[19]
COP fear with me COMP COP the death at him
'I'm afraid that he'll die'

(200) *Is eagal liom {fuil/tá} an bás aige

(201) *Tá an bás, is eagal liom, aige

It is possible to place the parenthetical at the end, but this seems to result in two independent clauses since

(202) Is eagal liom

can stand by itself as a sentence meaning 'I'm afraid it's so'.

2.6 Sequence of tense/mood restrictions

Many languages that employ tense or mood morphology restrict in various ways the tense or mood categories allowable in complements. Sequence of tense or mood restrictions may take any one of the following forms:

(i) Tense categories may be copied onto the complement from the CTP. In English, for example, reported speech (indirect discourse) may be marked with the primary tense of the CTP, the original [notional] tense appearing as secondary tense where possible.[20] A primary tense is one which makes reference to only one point in time, which is always relative to the time of the utterance. Secondary tenses make reference to an additional point in time, marking it relative to a primary tense, not to the moment of speaking. One common secondary tense is the secondary past, or perfect, formed in English with the auxiliary *have* followed by the past participle. In *Zeke had come by the time Zelda cashed her check* the verb complex *had come* references two points in time: the time, past relative to the moment of speaking, when Zelda cashed her check, and the time of Zeke's coming, which is past relative to Zelda's cashing her check (see Figure 2.3).

PAST PRESENT

[19] *Fuil,* 'nasalized' to *bhfuil* after *go*, is the subordinate clause version of the copula *tá*.

[20] See R. Lakoff (1970) and Riddle (1975b) for some discussion of the semantics of tense copying in English.

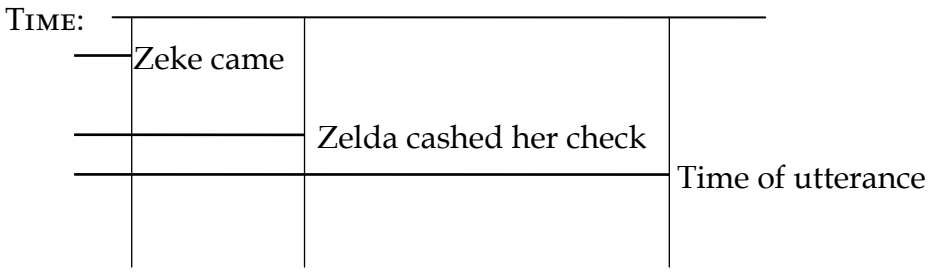


Figure 2.3 Time reference with a secondary tense

The (b) sentences below evidence tense-copying.

(203) a. Floyd said 'I came' PAST

b. Floyd said that he had come PAST + SECONDARY PAST

(204) a. Floyd said 'I'm coming' PRESENT

b. Floyd said that he was coming PAST

(205) a. Floyd said 'I'll come' FUTURE

b. Floyd said that he would come PAST + SECONDARY FUTURE

Tense copying represents an attempt to mold the complement to the subjective viewpoint of the speaker and is frequently associated with other changes in the complement (*cf* section 3.2.1). English and other languages use the distinction between primary and secondary time reference for various semantic purposes. Instead of (205b) we can say

(206) Floyd said that he'll come

which lacks tense copying. The future in the complement represents a primary tense distinction, *ie* one relative to the time of the utterance. The future reference in the complement in (205b) is relative to the time reference of the CTP and is therefore secondary. The most likely interpretation of (206) is that Floyd is still expected, whereas with (205b), Floyd has either already arrived or isn't coming.

Tense copying is not universal in reported speech. In Russian, for instance, reported speech is expressed in the tense in which the statement was originally made, regardless of the tense of the CTP:

(207) Boris skazal, čto prišël
Boris said COMP came-MASC-SG
'Boris said that he came'

(208) Boris skazal, čto prixodit
Boris said COMP come-3SG
'Boris said that he's coming'

(209) Boris skazal, čto pridët
Boris said COMP come-3SG-FUT
'Boris said that he will come'

These Russian sentences have no counterparts like the English (203b), (204b) and (205b).

(ii) Tense possibilities may be restricted on the complement because of the semantics of the CTP. For instance complements to the verb *promise,* when S-like, must employ future morphology:

(210) I promise that I'll come

(211) *I promise that I came

[(211) is grammatical in those dialects where *promise* = 'swear'.] The reason for this, of course, is that the thing promised necessarily follows the act of promising in time. We include here also complements in paratactic and serial constructions which must have the same time reference as the CTP. Paratactic and serial complements typically occur in semantic environments with determined time reference (section 3.1.1).

(iii) Choice of mood may be governed by the tense in the matrix. In such cases, the usual semantic role assigned to mood distinctions appears to be neutralized. An example of mood distinctions governed by tense is found in Classical Greek. In indirect discourse, the indicative follows matrix verbs in non-past tenses, while the optative follows past tenses. Classical Greek does not employ tense copying (Goodwin 1892):

(212) Légei hóti gráfei
say-3SG COMP write-3SG-PRES-INDIC
'He says that he is writing'

(213) Eîpen hóti gráfoi
say-3SG-PAST COMP write-3SG-PRES-OPTATIVE
'He says that he was writing'

2.7 ***Negative raising***

Negative raising is the name applied to the situation where a negative marker appears to be removed from the complement clause with which it is logically associated and

raised to the ordinary position for negatives within the matrix clause.[21] It occurs in the great majority of the world's languages. In the following examples, the (b) sentences have a raised negative:[22]

(214) a. I think that Floyd didn't hit Roscoe

b. I don't think that Floyd hit Roscoe

(215) a. Zeke believes that Martians don't live in caves

b. Zeke doesn't believe that Martians live in caves

(216) a. Hugh wants Mary Ann not to win

b. Hugh doesn't want Mary Ann to win

Negative raising occurs with only a restricted set of CTPs; for other CTPs, the presence of the negative in the complement results in a different meaning:

(217) I regret that Floyd didn't hit Roscoe

(218) I don't regret that Floyd hit Roscoe

Generally speaking, only propositional attitude predicates (such as *believe* or *deny),* desiderative predicates *(want),* and modal predicates *(can* or *be able)* allow for negative raising without change of truth value.

3.0. The semantics of complementation

Complementation is basically a matter of matching a particular complement type to a particular complement-taking predicate. The basis for this matching is the semantic relation between predicate and complement that is inherent in the meaning of the CTP, defining the relation of the predicate to the action or state described in the embedded predication, and the discourse function of the complement itself. In general, the stronger the semantic bond between the events described by the matrix and complement predicates, the greater the degree of syntactic integration there will be between the

[21] Negative raising has been referred to by a number of names in the literature: negative attraction (Jespersen 1964), negative transportation (R. Lakoff 1969), and negative absorption (Klima 1964). Horn (1978) reviewes the literature on and current status of negative raising.

[22] Sentences like (214b), it should be noted, seem to be ambigious between a negative raising interpretation and a true negation of the CTP, corresponding to a commitment/non-commitment interpretation of the speaker's evaluation of the complement proposition (Jackendoff 1971). These two interpretations are similar to Lyons' negation of the phrastic versus negation of the neustic, respectively (Lyons 1977).

two clauses. Sentence-like complement-types are characteristic of the weakest degree of syntactic integration, while reduced complement-types signal a stronger bond, and clause union signals a still closer degree of syntactic integration.

It is well to remember, however, that language specific factors keep this matching of complement-type to CTP from working in exactly the same way across languages. Languges have different inventories of complement-types, and even complement-types given the same label [nominalization, infinitive, etc.] may not be syntactically and morphologically identical. A given complement-type, embedded within the grammatical system of the language, composed of certain kinds of grammatical material, and connected to the matrix hypotactically or paratactically, either contributes or fails to contribute certain sorts of information to the construction as a whole and so is intrinsically better suited for certain kinds of CTPs and to certain discourse functions. In this way, different complement types can be used with the same CTP, exploiting their inherent meaning potential. The choice of complementizer may also affect the meaning potential of a complement.

3.1 *The semantics of complement types*

There are several factors that can affect the semantic potential of a complement type:

(i) inherent modality, such as mood distinctions
(ii) degree of reduction
(iii) choice of complementizer
(iv) method of syntactic relation to the matrix clause: subordination versus parataxis
(v) grammatical status of the notional predicate: verb, noun (in nominalized complements), adjective (in participial complements)

These factors will be taken up in order below.

3.1.1 *Mood distinctions*

*T*he term *mood* will be used in this chapter to refer to a grammatical category, while *modality* will refer to a semantic category. The two are related in that mood categories can usually be viewed as grammaticalizations of modalities.

As mentioned in section 1.3.2 the term *indicative* in complementation refers to the mood which most closely resembles that of simple declarative sentences. *Subjunctive* is the neutral term used to describe any opposing mood distinction in complementation; other terms such as optative, potential and consequential, carry with them more specific mood designations.

The essence of the subjunctive in complementation is the coding of complements that are in some way *dependent.* A complement is dependent if some aspect of its meaning or interpretation follows from information given in the CTP. Not all dependent complements, however, are coded as subjunctives in any given language with an indicative-subjunctive distinction. Three sorts of dependency are important here:

(i) time reference dependency
(ii) truth-value (epistemic) dependency
(iii) discourse dependency

A complement has dependent or determined time reference (DTR) if its time reference is a necessary consequence of the meaning of the CTP. A complement is truth-value dependent if the complement construction containing it involves an explicit qualification of commitment to the truth of the proposition embodied in the complement. A complement is discourse dependent if it is part of the background or common ground of the participants in a discourse.[23]

The most basic of these dependencies is time-reference dependency, and the property of DTR is almost always included in the modalities represented by the subjunctive. A complement having DTR typically refers to a future world-state relative to the time reference of the CTP. For example, in the sentence:

(219) José ordered João to interrogate Smith

João's interrogation of Smith must be thought of as following José's order in time. That is, the complement has a future time reference relative to the time reference of the CTP *order,* even if both events, the order and the interrogation, took place in the past relative to now. José could not, for example, order João to do something in the past relative to the act of ordering, thus ruling out a sentence like (220):

(220) *José is ordering João to interrogate Smith yesterday

CTPs that represent commands, requests, intention, desires, and expressions of necessity, ability, or obligation are among those whose complements have DTR.

Complements to many CTPs have independent time reference (ITR). The time reference of the complement in (221) is in no way logically bound by the time reference of the CTP:

(221) I know that { Zeke ate the leak / Zeke is eating the leak / Zeke will eat the leak }

CTPs that have complements with ITR include those that assert, report, comment on as background, or make truth-value judgements about their complements.

Lori is a language that utilizes its indicative/subjunctive opposition to express the ITR/DTR distinction. In Lori, both indicative and subjunctive complements use the

[23] Discourse-dependent complements have the property of being pragmatically presupposed (Kempson 1975).

complementizer *ke,* but the two moods differ in inflection. The indicative is conjugated for tense, but the subjunctive is not since it is on!y used for complements with DTR. The indicative/subjunctive distinction is illustrated below:

Indicative

(222) Zine fekr i-kone ke pia tile-ye dozi
woman thought PROG-do-3SG COMP man chicken-OBJ stole-3SG-INDIC
'The woman thinks that the man stole the chicken'

(223) Zine go ke pia tile-ye dozi
woman said COMP man chicken-OBJ stole-3SG-INDIC
'The woman said that the man stole the chicken'

(224) Zine naraxæte ke pia tile-ye dozi
woman regrets-3SG COMP man chicken-OBJ stole-3SG-INDIC
'The woman regrets that the man stole the chicken'

(225) Zine va šak e ke pia tile-ye dozi
woman from doubt is COMP man chicken-OBJ stole-3SG-INDIC
'The woman doubts that the man stole the chicken'

Subjunctive

(226) Zine pia-ye vadašt ke tile-ye bedoze
woman man-OBJ forced-3SG COMP chicken-OBJ steal-3SG-SJNCT
'The woman forced the man to steal the chicken'

(227) Zine va pia xas ke tile-ye bedoze
woman from man wanted-3SG COMP chicken-OBJ steal-3SG-SJNCT
'The woman wanted the man to steal the chicken'

(228) Pia kušeš kerd ke tile-ye bedoze
man attempt did-3SG COMP chicken-OBJ steal-3SG-SJNCT
'The man tried to steal the chicken'

(229) Pia xoš-eš i-a ke tile-ye le bedoze
man pleasantness-his PROG-come-3SG COMP chicken-OBJ PL steal-3SG-SJNCT
'The man likes to steal chickens'

(230) Pia i-tares ke tile-ye bedoze
man PROG-be able-3SG COMP chicken-OBJ steal-3SG-SJNCT
'The man is able to steal the chicken'

As we see in the last three examples, complements with DTR don't have to represent future events, but may simply represent potential events or states. The range of DTR complements includes those whose time reference is the same as the CTP, such as complements to phasal (or aspectual) predicates like *begin,* those that are timeless in the sense that they represent general conditions or states, such as certain complements of *like,* and those that have no time reference because they represent non-events (as distinct from those that are simply potential) such as certain complements of *try.* What all these have in common, of course, is that their time reference is determined by the meaning and use of the CTP so that only one time reference, the one determined by the CTP, is possible for these complements.

Indicative/subjunctive oppositions like the one illustrated above for Lori are fairly common. Bulgarian, like Lori, has its indicative/subjunctive opposition built on ITR/DTR. The indicative and subjunctive have distinct complementizers *če* and *da* respectively) and differ in inflectional possibilities; the indicative is inflected for tense while the subjunctive is invariable and uses the same person-number inflections as the indicative present (data from Ilya Talyev):

Indicative

(231) Misli, če vie ste umoren
think-3SG COMP you COP tired
'He thinks that you're tired'

(232) Dobre, če te sreštnax
good COMP you met-1SG
'It's good that I met you'

(233) čux, če toj mu dal parite
heard-1SG COMP he to him gave-3SG money
'I heard that he gave him the money'

Subjunctive

(234) Mislja da ida
think-1SG COMP go-1SG-SJNCT
'I intend to go'

(235) Iskam da kupja
Want-1SG COMP buy-1SG
'I want to buy'

(236) Moga da vidja
be able-1SG COMP see-1SG-SJNCT
'I can see'

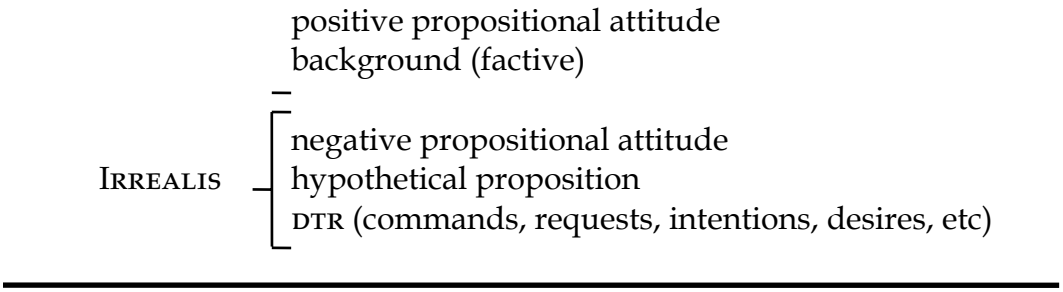
(237) Veče započnaxa da minavat
already began-3PL COMP pass by-3PL-SJNCT
'They've already begun to pass by'

Truth-value dependent complements are those whose CTP expresses a kind of propositional attitude toward the truth of the complement, for example CTPs such as *think, believe, doubt, deny* and *be possible* (*cf* section 3.2.2). Complements to such predicates have ITR. It is fairly rare to find a contrast in form between complements of propositional attitude CTPs and those that denote assertions (as with complements of *say*) or reports of such assertions. Vestiges of such systems are found in Central Asia, however. There one can find a contrast between truth-value dependent complements associated with an ordinary complementizer, and assertions or reports of assertions associated with an adverbial participial form of, for example, *say* or *do.* Such a distinction was illustrated for Uzbek in section 2.5, where the verb 'know' expresses a propositional attitude and takes an extraposed complement with the complementizer *ki*..The verb 'say', on the other hand, expresses no propositional attitude, takes a non-extraposed complement, and is preceded by *deb* 'saying'.

A much more common situation is for languages to distinguish between positive propositional attitudes and negative or dubitative propositional attitudes and group the former with assertions and reports of assertions as the indicative, and the latter with DTR complements as the subjunctive. It is common to find a class of indicative complements that includes not only those of positive propositional attitude verbs such as *believe,* but complements to commentative or factive predicates such as *regret.* These complements typically represent propositions taken as background to a discourse, and are normally presupposed to be true (Kiparsky and Kiparsky 1970. Kempson 1975, Wilson 1975; *cf* section 3.2.4). Hypotheticals line up with negative or dubitative propositional attitudes as subjunctive, though they may be associated with a special hypothetical or conditional mood in some languages (*cf* chapter III:4). Contrafactives like *pretend* pose special problems (*cf* section 3.2.3). We can distinguish in this way complements that have *realis* modality versus those that have *irrealis* modality. Realis modality is associated with complements whose propositions are asserted as a fact or commented on as a factual or actual event or state. Irrealis modality carries with it no such implication; what one can infer about a complement with irrealis modality comes directly from the CTP. Table 2.3 displays the distribution of realis and irrealis modality relative to some complement roles.

Table 2.3. *Realis and irrealis modality in complement roles*

	Complement role
Realis	assertion
	report of asertion



Russian is an example of a language for which a realis/irrealis distinction underlies the indicative/subjunctive opposition:

Indicative

(238) Ja govorju, čto Boris pridët
I say COMP Boris will come
'I say that Boris will come'

(239) Ja dumaju, čto Boris pridët
I think COMP Boris will come
'I think that Boris will come'

(240) On govoril, čto Boris pridët
he said COMP Boris will come
'He said that Boris will come'

(241) Mne nravitsja, čto Boris pridët
1S-DAT likes COMP Boris will come
'I like it that Boris will come'[24]

Subjunctive

(242) Ja somnevajus', čtoby Boris prišël
I doubt COMP Boris come-SJNCT
'I doubt that Boris will come/came'

(243) Ja ne verju, čtoby Boris prišël
I NEG believe COMP Boris come-SJNCT
'I don't believe that Boris will come/came'

(244) Ja xoču, čtoby Boris prišël
I want COMP Boris come-SJNCT
'I want Boris to come'

[24] I would like to thank Aleksandra Aikhenvald for pointing out an error in an earlier version of this sentence.

(245) Ja bojus', čtoby Boris ne prišël
I fear COMP Boris NEG come-SJNCT
'I'm afraid that Boris will come'

(246) Ja prikazal, čtoby Boris prišël
I ordered COMP Boris come SJNCT
'I ordered Boris to come'

(247) Nužno, čtoby Boris prišël
necessary COMP Boris come-SJNCT
'It's necessary for Boris to come'

Languages that utilize indicative/subjunctive opposition for realis/irrealis distinction, like Russian and Persian, frequently do not have tense distinctions available for their subjunctives even though tense distinctions are coded in the indicative. While tense distinctions would be useless *(qua* tense distinctions) in the DTR range of the subjunctive, there is no logical reason why they could not be used with subjunctive complements to propositional attitude predicates as they are in English:

(248)

I don't believe that —
- Floyd skipped town
- Floyd is skipping town
- Floyd will skip town

Yet neither Persian nor Russian (as glosses to some of the above sentences indicate) have tense distinctions in the subjunctive.

One sort of limited exception to this is found in Bemba (Givón 1971, 1972). Bemba has a basic realis/irrealis distinction in its mood categories, but divides the irrealis modality between two subjunctives. The first, called by Givón the 'subjunctive of uncertainty', encodes negative propositional attitudes. The second, the 'subjunctive of coercion', is associated with DTR contexts. Indicatives in Bemba have a large number of tense-aspect distinctions, including a number of futures representing different degrees of futurity. The subjunctive of uncertainty, like the Russian and Persian subjunctives discussed above, has no tense distinctions available, utilizing only a simple aspect distinction. The subjunctive of coercion, however, does have tense distinctions, contrasting a non-future with the various futures available in Bemba:

(249) A-à-ebele John ukuti a-y-e
he-PAST-tell John COMP he-leave-SJNCT
'He told John to leave'

(250) A-léé-eba John ukuti a-y-e
'He is telling John to leave'

(251) A-kà-eba John ukuti a-kà-y-e
'He will tell John to leave (tomorrow)'

(252) A-ká-eba John ukuti a-ká-y-e
'He will tell John to leave (after tomorrow)'

Tense marking in these is simply a matter of tense copying (section 2.6) since the marking is dependent on that of the CTP.

A complement is discourse dependent if the proposition it contains constitutes part of the common ground or background to a discourse. Discourse-dependent complements include complements to commentative (factive) predicates and complements to those negative propositional attitude predicates that constitute denials, such as *deny* or *not believe*.[25]

There are a few complement systems, Spanish among them, that group together discourse-dependent complements with DTR complements and complements of negative propositional attitude predicates to form a non-assertive modality which is coded in the subjunctive (Hooper 1975, Terrell and Hooper 1974, Klein 1977, Guitart 1978; but see also Lunn 1995). The indicative encodes assertions, reports of assertions, and complements of predicates with positive propositional attitudes; such complements can be called *assertive* (*nb* not all complements in this class are assertions in the technical sense of this term).

In Spanish, the distribution of indicative and subjunctive complements parallels the Russian case exemplified above except that discourse-dependent complements are coded in the subjunctive. Thus, sentence (253)

(253) Lamento que Juan salga esta noche
regret-1SG COMP John leave-3SG-SJNCT this night
'I regret that John will leave tonight'

employing the subjunctive is grammatical, whereas

(254) *Lamento que Juan sale esta noche
regret-1SG COMP John leave-3SG-INDIC this night

employing the indicative is not. The same sentence in Russian is grammatical only with the indicative:

(255) Sožaleju, čto Ivan uedet segodnja večerom
regret -1SG COMP Ivan leave-3SG-FUT today evening
'I regret that Ivan will leave tonight'

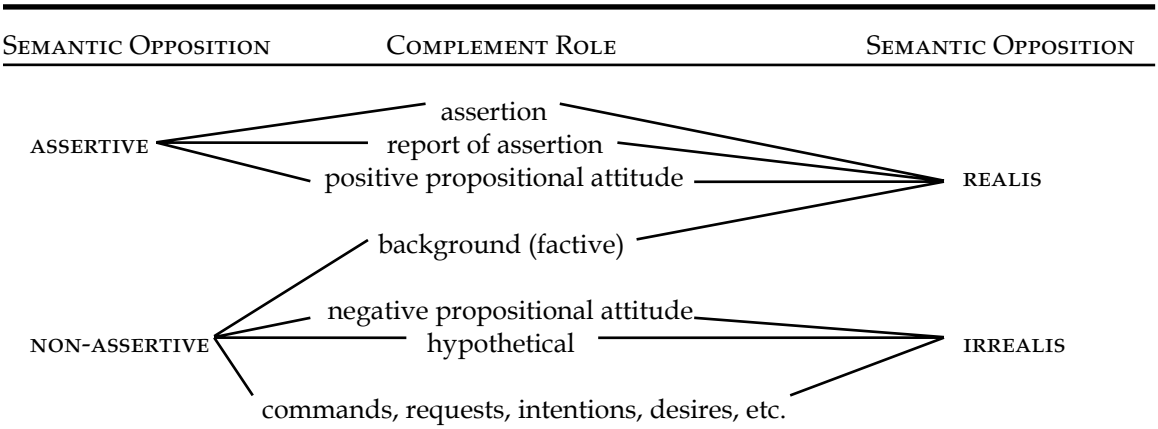
[25] See Lyons (1977) for the distinction between denial and assertion of negative propostitions.

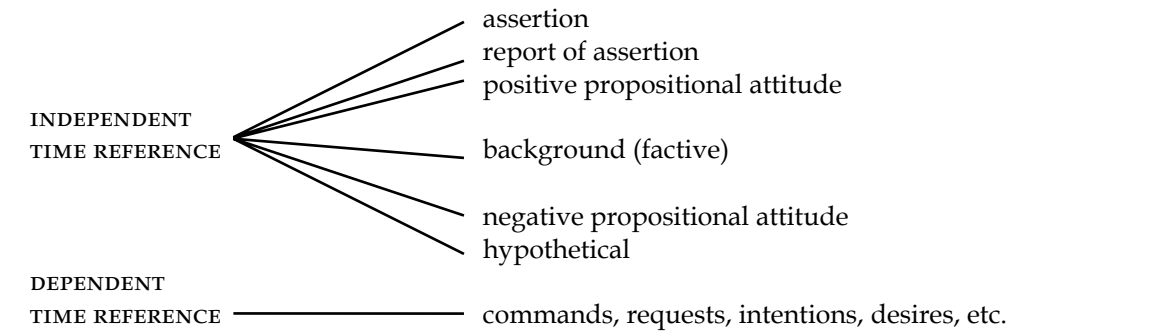
Complements of commentative predicates like *regret* are discourse dependent because in saying sentences like (253), one must assume (if one is being sincere) that the hearer already knows the information in the complement. This information is the common ground or background to the discourse and the function of the sentence is to comment on this information (*cf* 3.2.4). (253) would have an indicative complement in Persian and Russian.

The tense distinctions available in the Spanish subjunctive are used mostly in tense copying, but can, as when used with complements to commentative predicates, be used to represent real, independent tense distinctions. The greater the range of the subjunctive, in particular when it has the ability to code non-assertive ITR complements, the more likely it is to be able to express independent tense.

The three semantic distinctions underlying the indicative/subjunctive oppositions described above can be displayed as in Table 2.4.

Table 2.4. *The three semantic distinctions underlying indicative-subjunctive oppositions*





I do not intend to imply that the hierarchy of complement roles given in Table 2.4 is always observed in indicative/subjunctive oppositions, though in most cases it is. In Modern Literary German, for instance, the subjunctive is used for reports of assertions, but is only used sporadically and somewhat idiosyncratically elsewhere in the hierarchy.

For example, complements to *wollen* 'wish' are in the indicative when the main verb is in the present tense, but in the subjunctive when the main verb is past (Lockwood 1968):

(256) Wir wollen, dass er es tut
we wish-PRES COMP he it do-PRES-INDIC
'We wish that he'd do it'

(257) Wir wollten, dass er es täte
we wish-PAST COMP he it do-PAST-SJNCT
'We wish that he did it'

Cases like this illustrate the conventionalized use of mood present in mood government (section 2.6). Such cases represent a considerable reduction or even loss of the original modal character of the subjunctive and the subsequent grammaticization of the use of the subjunctive in a portion of its former range.[26]

The meaning differences between indicative and subjunctive complement types can be exploited with a given CTP allowing for the expression of a variety of implication relationships. For instance, in Bemba (Givón 1971, 1972) the realis/irrealis modality opposition expressed by the indicative/subjunctive distinction may be used with the same coercive verb to indicate a difference in implication:

(258) John a-à-koonkomeshya Robert a-à-boombele
John 3SG-PAST-order Robert 3SG-PAST-work-INDIC
'John ordered Robert (long ago) and Robert worked (long ago)'

(259) John a-à-koonkomeshya Robert a-bomb-e
John 3SG-PAST-order Robert 3SG-work-SJNCT
'John ordered Robert to work (and Robert may or may not have worked)'

The complement in (258) can be inferred to be a factual event. The subjunctive in (259), however, carries no implication that the event it encodes is a real or actual event.

3.1.2 *Degree of* r*eduction*

There is a general principle in complementation that information tends neither to be repeated nor lost. Exceptions to this are easy enough to find, but the principle holds true in the great majority of cases. For this reason, reduced complements, which are likely to lack tense distinctions (see section 1), are typically associated with predicates whose complents have DTR. Infinitives, for example, are frequently restricted to DTR contexts since their use elsewhere would result in information loss. Indicative complements are normally excluded from DTR contexts since they are typically coded for tense, and therefore the expression of tense in such cases is redundant.

[26] See Lockwood (1968) for discussion of the reduction of the former role of the subjunctive in German.

In English, infinitives, with a couple of exceptions to be discussed below, are associated with DTR contexts while indicatives are associated with ITR contexts. Infinitives occur as complements to predicates expressing commands, requests, intentions, desires, etc. They do not normally occur as complements to predicates that are assertive, commentative, or express propositional attitude, all of which take indicative complements in English. The exceptions to this are instructive in that they show how various factors may override the general principles governing the distribution of complement types in a language. *Believe,* a propositional attitude predicate, can take either infinitive or indicative complements:

(260) I believe Zeke to be an idiot

(261) I believe that Zeke is an idiot

Sentences like these can be used, straightforwardly enough, to make a statement about propositional attitude. But such sentences can also be used to assert the proposition embodied in the complement: that is, the function of the statement is not simply to express a propositional attitude, but rather to present the proposition embodied in the complement as an assertion. The function of *believe* and similar verbs especially in sentences like (260) is simply to soften the force of the assertion, guiding the hearer to a proper appreciation of the complement proposition in its context, rather than being in itself part of what is asserted (see Urmson 1963). The use of *believe* here is in many respects like the parenthetical use of this predicate described in section 2.5. The time reference of *believe* in such cases represents the time reference of the asserted proposition. When (260) is used to assert the complement proposition, there is, then, only one significant time reference, that of the asserted proposition. So an infinitive can be used without loss of information.[27]

Like *believe, promise* can also take an infinitive or indicative complement:

(262) I promise to go at nine

(263) I promise that I'll go at nine

Notice, however, that infinitives are only possible with *promise* if the subject of *promise* and the complement predicate are coreferential, so that I *promise that John will go is* not the same as I *promise John to go;* in the latter *John* is an idirect object of *promise*, not a raised subject. The reason for this has to do with the 'controllability factor' associated with infinitives (see below). Unlike *believe,* whose complements have ITR, complements to *promise* have DTR: the thing promised must follow the act of promising. We would predict, then, that *promise* would take infinitive complements only, which as (263) illustrates, is

[27] The parenthetical analysis of sentences with *believe* + infinitive only applies, of course, to sentences with first person singular subject.

clearly not the case. The reason for the acceptability of (263) probably derives from the fact that it [like (262)] is semantically related to one meaning of (264):

(264) I'll go at nine

(264) can be used as an assertion, but it is far more likely to be used in performing the illocutionary act of promising, in which case it means about the same thing as (263). In (263) and its parenthetical equivalent (265)

(265) I'll go at nine, I promise

the nature of the speech act is made explicit, unlike (264), but the illocutionary force of the statement is the same as (264). (263), then, can be looked at as a 'syntactic blend' (G. Lakoff 1974) of the semantically equivalent statements (262) and (264), consisting of a statement like (264), with the illocutionary force of a promise, and the CTP *promise* as in (262), making the nature of the speech act explicit.

Because reduced complement types like infinitives tend to be used in DTR contexts, they are not discourse dependent. Their time reference is either fixed, in which case there is a necessary sequencing of matrix and complement states or events, or the time reference is simply irrelevant, in which case the CTP amounts to a comment or judgement on any potential occurrence of the complement event or state. The latter case can be illustrated by sentences like:

(266) I like to eat snails

(267) It's odd for camels to drink vodka

One consequence of fixed time reference is the implication (where semantic-pragmatic factors permit) that the matrix event or state is in some way responsible for, or at least affects, the complement state or event. This was called the 'controllability factor' by Riddle (1975b). This controllability factor does not, of course, hold in ITR contexts, and thus the distinction between the DTR of S-like complements and the DTR of reduced complements can he exploited with given CTPS to create meaning contrasts:

(268) a. I remembered that I closed the door

b. I remembered to close the door

(269) a. Zeke decided that he was a bootlegger

b. Zeke decided to be a bootlegger

(270) a. Nell told Enrico that he was a good singer

b. Nell told Enrico to be a good singer

The complements in the (a) sentences above refer to states of affairs that exist independently of the action or state described in the matrix, whereas in the (b) sentences, there is a clear dependence between the matrix and complement proposition.

A further consequence of the controllability factor is that, if the CTP can be interpreted as an action, then the complement can be interpreted as an action even though the complement in isolation refers to a state. For instance,

(271) Floyd is a nice boy

(272) Floyd is an acrobat

describe two states attributed to Floyd. When the above propositions are made infinitival complements, as in

(273) Floyd tried to be a nice boy

(274) Floyd tried to be an acrobat

they are interpreted actively, describing actions not states. Again, the difference between these reduced complement types and non-reduced complement types can be exploited for semantic effect:

(275) a. Floyd remembered that he was a nice boy

b. Floyd remembered to be a nice boy

(276) a. Max convinced Floyd that he was a nice boy

b. Max convinced Floyd to be a nice boy

(277) a. Floyd pretended that he was a nice boy

b. Floyd pretended to be a nice boy

The (a) sentences have the state interpretation, while the (b) sentences express some notion of activity.

3.1.3 Complementizers

When a form functions as a complementizer and something else, its meaning outside the complement system will likely be related to its use in complementation. The

complementizer, then, may not be simply a neutral marker of a complement type, but may bring with it a meaning that can affect the semantics and therefore the distribution of the complement type it is associated with. A straightforward example of this is the English particle *if,* which functions as a sentence connective in

(278) I'll leave if Zeke comes

and as a complementizer in:

(279) I doubt if Zeke knows

The constructions in (278) and (279) are clearly different; as one illustration of this difference, (280) but not (281) is a possible sentence:

(280) If Zeke comes, I'll leave

(281) *If Zeke knows, I doubt

As a sentence connective, *if* sets up a relation between antecedent and consequent states or events; the consequent does not hold unless the condition stated in the antecedent holds. As a complementizer, *if* is mostly used with complements where the usual positive implications associated with a given CTP are not meant to hold. For instance, complements of *nice* normally are given a factive interpretation, *ie* presupposed to be true:

(282) It was nice that Zeke came

(283) It wasn't nice that Zeke came

It is reasonable to infer from both (281) and (282) that Zeke in fact came. When the matrix is stated conditionally, the complement is not meant to have a factive interpretation and *if* is chosen as the complementizer:

(284) It would be nice if Zeke came

Similarly, complements of *know* as in

(285) Alf knows that Zeke came

are assigned a factive interpretation. This interpretation can be cancelled with *if* as complementizer:

(286) Alf knows if Zeke came (but I don't)

It doesn't follow from (286) that Zeke came. But the predicate *doubt,* which expresses a negative propositional attitude amounting to a denial of the proposition embodied in its complement, as in

(287) I doubt that Zeke came

can also take complements with *if*, as in:

(288) I doubt if Zeke came

The effect of *if* as a complementizer is to cancel positive implications, and it has no effect on negative ones, so (287) and (288) are roughly synonymous.

In conditional constructions like (278) and (280), the *if*-clause represents a non-actual or irreal state or event. The irrealis modality of the consequent is identified by *will/would* or some other indicator of futurity. In complementation, *if* is likewise associated with non-actual or irrealis modality; none of the complements in (284), (286), or (288) can be taken as a real or actual event. Irrealis modality seems to underlie both uses of *if*, the meanings being clearly related.

Bolinger (1972) has claimed the *that*-complementizer and the *that*-demonstrative in English are similarly related in that the distribution of the *that*-complementizer is affected by its ultimately demonstrative function.

In many languages adpositions function as complementizers (*cf* section 1.2). Their meaning outside complementation may relate directly to their use in complementation. As one example, the Irish preposition *gan* translates English 'without' in its use with nominal and phrasal adjuncts:

(289) D'imigh sé gan leabhar
left he without book
'He left without a book'

(290) D'imigh sé gan mé a fheiceáil
left he without me COMP see-NZN
'He left without seeing me'

In complementation, *gan* is used to negate noun complements:

(291) D'iarr mé air gan imeacht
asked I on him NEG leave-NZN
'I asked him not to leave'

Semantically, *gan* is negative in all its uses. Even in (289), *gan* could be roughly translated as 'not with'. The negative aspect of *gan* predominates in (290) and (291).

3.1.4 *Manner of syntactic relation to the matrix*

Notional complements may be rendered (1) as subordinate clauses or (2) as verb phrases in paratactic constructions, in which case they are syntactically on a par with the clause containing the CTP (see section 2.4). This syntactic difference can be exploited to create semantic contrasts between paratactic and subordinate complement types.

In Lango, the subjunctive and the paratactic complement types can both be used with a large number of CTPs. One example of this contrast is given below:

(292) Dákô òdɪ̀ò ìcɔ̂ òkwàlò gwɛ̀nò
woman pressed-3SG man stole-3SG chicken
'The woman forced the man to steal the chicken' (paratactic)

(293) Dákô òdɪ̀ò ìcɔ̂ nî òkwǎl gwɛ̀nò
woman pressed-3SG man COMP steal-3SG-SJNCT chicken
'The woman pressed the man to steal the chicken' (subjunctive)

With (292), we can legitimately infer that the man in fact stole the chicken, while with (293), we can make no such inference: we only know that the woman put pressure on the man to do what she wanted him to do. Paratactic complements have interpretations as 'realized' states or events; subjunctive complements have an 'unrealized' interpretation. This semantic difference follows from the syntax. Since the Lango paratactic complement behaves syntactically like a juxtaposed independent sentence, saying (292) amounts to making two assertions:

(294) Dákô òdɪ̀ò ìcɔ̂ òkwàlò gwɛ̀nò
woman pressed-3SG man stole-3SG chicken
'The woman pressed the man. He stole the chicken'

Since each of the component predications represents an independent assertion, it follows that the complement would be interpreted as a fact. (293), however, represents a single assertion; the interpretation of the complement is mediated through the semantics of the CTP, which in this case does not allow an implicative interpretation. The semantic difference, then, between parataxis and hypotaxis (subordination) in complementation involves the number of assertions the construction contains; each clause in the paratactic construction is a separate assertion, whereas in hypotaxis there is a single assertion involving both CTP and complement .

Paratactic complements typically occur in DTR environments, especially in causative and immediate perception contexts. The reason for this is that the nature of these situations, a cause and an eftect, an action and its perception, lend themselves particularly well to coding as two separate though logically connected events. The complement in these cases can be interpreted as a separate assertion, taking its place in the progression of the discourse without the mediation of the CTP. Hypotaxis in

complementation is a device for qualifying the interpretation of a predication with the CTP acting as a sort of semantic filter.

Hypotaxis is the complementation device *par excellence* because the complement is, logically, an argument of the predicate and hypotaxis is a direct syntactic reflection of this semantic situation. The syntax parallels the semantics. Parataxis will likely be used in complementation only where the interpretation of the complement mediated through the CTP will be essentially the same as if it were coded as a separate assertion .

Serial constructions are in many respects intermediate between hypotaxis and parataxis. As in hypotaxis, notional complements in serial constructions form a single assertion with their CTPs. But like parataxis, the component verb phrases seem to be syntactically on a par.[28] The fact that a serialized construction typically represents one assertion and a paratactic construction two, affects their use in complementation. Both are usual in causative, immediate perception, and phasal contexts. Serial constructions alone are used in abilative and desiderative contexts because these are incompatible with the two-assertion aspect of parataxis. Parenthetical senses of predicates like *believe* are quite compatible with parataxis, but not serialization.

3.1.5 *Grammatical status of the complement predicate*

The part of speech (verb, noun, or adjective) of the complement predicate can be correlated with the use of the complement type that contains it, though how closely a complement type conforms to the 'ideal' distribution suggested by the grammatical status of its predicate depends on a number of factors, chief among which is the number and the kind of oppositions (distinct complement types) in the complement system. What follows are some generalizations about 'ideal' distributions. (We can define an 'ideal' distribution as a list of the uses that some grammatical entity is by nature best suited for and for which it is invariably used if it exists in the system at all.) Since complement predicates are coded as verbs in the great majority of cases (*eg* in S-like, paratactic, and infinitive complements) coding predicates as verbs can be viewed as the unmarked case, and indeed there are languages which allow this as the only possibility for coding predicates. We will therefore concentrate our attention here on the marked cases, *ie* complement predicates as nouns or adjectives, noting that these forms always coexist in complement systems with predicates coded as verbs.

Nominalizations can be divided into two types: nominalized propositions and activity or state nominalizations. Nominalized propositions are referring expressions, *ie* they are used by speakers to refer to information given previously in a discourse or taken as background to a discourse. Nominalized propositions, then, are background information, discourse dependents and, of course, do not in themselves constitute assertions. Activity or state nominalizations are used to refer to kinds of activities or states, not to specific events or states constituting backgrounded information. Examples of each sort of nominalization are given below:

---

[28]The status of these verb phrases has been the subject of much debate (Schachter 1974, Bamgbose 1974, Joseph & Zwicky 1990, Lefebvre 1991). A possible diachronic connection is discussed in Noonan and Bavin (1981).

(295) Nominalized propositions
a. *Zeke's hitting Roscoe* annoyed Floyd

b. We regret *Floyd's flunking Flemish*

c. Floyd's flunking Flemish is unlikely

d. *Leo's drinking the metheglin straight down* caused him to pass out

e. *Eating Beefos* made Mort sick

(296) Activity or state nominalizations
a. Nell enjoys *shooting rabbits*

b. *Eating grapes is* fun

c. Henry is proud of *being tall*

d. *Drinking mead* causes gout

e. Arnold disapproves of *children drinking water*

Nominalizations of either sort result in a sort of objectification of the predicate, investing it with the status of a name. Nominalized propositions needn't be presupposed, as (295c) shows (activity or state nominalizations can't be presupposed since they're non-referential), but even when non-factive, they still represent backgrounded information. This is the essential characteristic of nominalized predications, though they may take on broader functions in the context of particular grammars.

As discussed in section 1.3.6, adjectivalized predications, or particlples, because of the peculiarities of their syntax *vis-à-vis* other complement types, play a rather restricted role in complementation, being limited, normally, to use with immediate perception predicates, where, however, they are of reasonably frequent occurrence. The use of participles with immediate perception predicates follows from the use of participles generally.

As nominalization involves objectivalization of predicates, adjectivalization involves converting predicates into modifiers or qualifiers, specifying either attributes of nominals or attendant circumstances of events. An example of this latter use of participles is

(297) Leaving the room, Gurt saw Burt

where the participial phrase *leaving the room* sets forth the circumstances under which the action of our primary concern, *Gurt saw Burt,* takes place. The two events are taken to be simultaneous and share a notional argument, *Gurt.*

These characteristic features of participles, the ability to express simultaneity with another event and the sharing of arguments with the main event, makes the participle quite suitable for use with immediate perception predicates: the event coded by the CTP and that coded by the complement must necessarily be simultaneous, and, furthermore, participants involved in the matrix and complement events can be said to be shared. For instance, if we say

(298) Gurt saw Burt leaving the room

it follows for all practical purposes that

(299) Gurt saw Burt[29]

Burt, then, is a shared participant in the two events coded in (298), and the events themselves must be viewed as simultaneous.

The characteristics of the participle that make it compatible with immediate perception predicates make it unsuitable for use with most CTPS. To give just one example, in the sentence

(300) *I believe Brinck breaking his leg
(*cf* I believe that Brinck broke his leg)

the matrix and complement events do not necessarily occur simultaneously. Sentence (301), where the events do occur simultaneously, is possible.

(301) I believe that Brinck is breaking his leg

but so is (302) possible:

(302) a. I believe that Brinck broke his leg

b. I believe that Brinck will break his leg

With immediate perception predicates, the two events are necessarily, not accidentally, simultaneous. Further, it does not follow from (300) (or its grammatical counterpart) that

(303) I believe Brinck

[29]But see the discussion of this issue in Kirsner and Thompson (1976) and section 3.2.12.

3.2 *The classes of complement-taking predicates*

In the last section, characteristic semantic features of complement types were discussed. In this section we will complete the discussion of the semantics of complementation by discussing semantic classes of CTPs. The schema provided here for the classification of CTPs is meant to be a practical one, allowing for easy identification of the classes relevant for a discussion of complementation, and to be one with labels which correspond to those most commonly found in the literature.

It should be made clear at this point that the classes of CTPs discussed below are meant to reflect the uses of CTPs in complementation rather than the full semantic properties of any given verb or set of verbs in any language. For instance, the English verb t*ell* as a CTP has two main uses, one as an utterance predicate

(304) Floyd told Zeke that Roscoe buried the mash

and another as a manipulative predicate:

(305) Floyd told Zeke to bury the mash

It is certainly the case that there is a unified meaning of *tell* under which both uses are subsumed, but in this section we will consider each of the uses of *tell* separately since it is the uses that determine the choice of complement type.

References to notions like 'subject' in this, as in other sections, are meant to apply only in those languages where subjects and other grammatical relations can meaningfully be said to exist (*cf* Schachter 1976 and Noonan 1977); otherwise, 'subject' should be taken to refer to A and S arguments (Dixon 1994, see also Palmer 1994). 'Basic subjects' refer to subjects of active sentences.

3.2.1. *Utterance predicates*

Utterance predicates are used in sentences describing a simple transfer of information initiated by an agentive subject. The complement represents the transferred information, and the CTP describes the manner of transfer, the illocutionary force of the original statement, and can also give an evaluation of the speaker's (as opposed to the agent subject's) view of the veracity of the proposition encoded in the complement. The basic subject of the CTP is the entity to whom the original statement is attributed, *ie* the agent. The addressee may he expressed as a DO or IO in the matrix, but it is less likely to be overtly expressed than the agent. English verbs that can be used as uttcrance predicates include *say, tell, report, promise, ask*[30] etc., as we see in the following sentences:

---

[30]Many of these verbs can also be manipulative predicates (section 3.2.8). The difference between these uses involves whether there is a simple transfer of information (utterance predicates) or a direct attempt to influence or manipulate the addressee (manipulative predicates). The distinction may be a fine one in some cases, but the syntactic consequences are considerable: in English it is the difference between an s-like complement and an infinitive.

(306) Zeke said that Norm left

(307) Herm told Rita that Norm left

(308) The UPI reported that Norm left

(309) Norm promised that he would leave

(310) Nell asked if Norm left

The information given in the complement of utterance predicates can be presented in either of two ways: as a direct quotation (direct discourse) or as an indirect quotation (indirect discourse). The function of the direct quotation is to give the actual words of the speaker, while indirect quotations are adapted in varying degrees to the viewpoint of the speaker (the one who utters sentences like (306-10). This adaptation involves the reorientation of the various deictic or shifter categories (Jakobson 1957), for example pronouns, locative markers, and tense markers (section 2.6). For instance, if the original statement was

(311) I'll go there tomorrow

a direct quote would simply take the form:

(312) He said, 'I'll go there tomorrow'

An indirect quote, on the other hand, might take the form

(313) He said that he would come here today

where each of the shifter categories is appropriately modified to the viewpoint of the reporter.

Not all languages employ indirect quotes, or if they are used, they may be used only infrequently. Mayfield (1972) reports that Agta has no true indirect quotes. Shackle (1972) reports that true indirect speech is rare in Punjabi, and Bailey (1924) claims that indirect speech is hardly used at all in Shina.

With the exception of *promise* (discussed in sections 2.6 and 3.1.2) and similar predicates, complements to utterance predicates have ITR. This favors the use of s-like complement types since they are the most likely to allow tense to be statable independently of the matrix. Further, by definition, direct discourse automatically results in s-like complements. Therefore, since all languages have ways of presenting direct quotes, all languages use s-like complements with utterance predicates, though other complement types can occur with predicates in this class for indirect discourse. There are, in fact, languages that use true s-like complements only with direct quotes, for example

Chantyal [Noonan 2003]. In Chantyal, in general, only nominalized complements are permitted except in those cases where the complement can be interpreted as a direct quote, in which case the verb *bɦi-* 'say' must be overtly present . So, for example, we find the following:

(314) na tisuŋ Kadmandu-ri ɦya-i bɦi-wa khi-sə səmjɦi-i
I last year Kathmandu-LOC go-PERF SAY-NZN he-ERG remember-PERF
'He remembered that he went to Kathmandu last year'
(He remembered saying, "I went to Kathmandu last year")

In this sentence, the object of *səmjɦi-* 'remember' is *bɦi-wa* 'saying', which in turn takes the preceding clause as its object complement. While forms like *bɦi-wa* frequently develop into complementizers, there is evidence that this has not yet occurred in Chantyal. One bit of evidence supporting this is that the complements of *bɦi-wa* can only be understood as direct quotes: 1) the sentence cannot be interpreted as meaning 'He remembered that I went to Kathmandu last year', and 2) if the complement clause subject *na* 'I' is replaced by *khi* 'he', the sentence cannot be interpreted as 'He$_i$ remembered that he$_i$ went to Kathmandu last year' where the two instances of 'he' are coreferential. The latter follows because *khi tisuŋ Kadmandu-ri ɦya-i bɦi-wa khi-sə səmjɦi-i* means literally: 'He remembered saying "He went to Kathmandu last year"'.

Almost all languages distinguish direct from indirect discourse by means of intonation: there is typically a pause before and/or after the direct quote, while indirect discourse is treated like any other complement from the standpoint of intonation. In addition, some languages, for instance Bemba, use different complementizers for indicating direct versus indirect discourse (Givón 1972):

(315) John a-à-ebele *uku-ti* n-kà-isa
John 3-SG-PAST-say INF-say 1-SG-FUT-come
'John said that I will come

(316) John a-à-ebele *a-à-ti* n-kà-isa
John 3SG-PAST-say 3SG-PAST-say 1SG-FUT-come
'John said "I will come" '

The infinitive form of the defective verb *ti* 'say' is used as a complementizer with indirect quotes, while its simple past counterpart is used with direct quotes. In English, the complementizer *that* is optional with indirect quotes, but obligatorily absent with direct quotes:

(317) a. *MacArthur said that 'I shall return'
b. MacArthur said 'I shall return'

(318) a. MacArthur said that he would return'

b. MacArthur said he would return

With indirect quotes, subjunctive and other reduced complement types can also occur, though they are far less common in this context than indicative complements. When such complement types do occur with indirect quotes, their inflectional possibilities can be utilized to indicate tense distinctions. For instance, Latin is said to have three infinitives: a present, a perfect, and a future (Greenough 1903). The future infinitive is only used in indirect discourse. The present and perfect infinitives, like the Greek present and aorist infinitives discussed in section 1.3.4. ordinarily represent imperfect and perfective aspect respectively. In indirect discourse, the tense markers on these infinitives assume a true time reference function:

(319) Dīcunt eum *iuvāre* eam
say-3PL-PRES him help-PRES-INF her
'They say that he's helping her'

(320) Dīcunt eum *iūvisse* eam
say-3PL-PRES him help-PERF-INF her
'They say that he helped her'

(321) Dīcunt eum *iūtūrum esse* eam
say-3PL-PRES him help-FUT-PART be-PRES-INF her
'They say that he'll help her'

Darden (1973) reports a similar phenomenon in literary Lithuanian. In such cases, then, the ITR context of complements to utterance verbs enables the time reference potential of this complement type to be realized.

Because the ITR context provided by indirect quotes so heavily favors indicative complements, the use of other complement types may be idiosyncratic. The German use of the subjunctive discussed in section 3.1.1 is an example of this sort; the use of the subjunctive there depends on the tense of the CTP. In English, the utterance predicate *report* can take infinitive complements in indirect discourse as well as the more expected indicative (as in (308) above):

(322) The UPI reported Norm to have left

The idiomatic nature of this usage is revealed when we examine semantically similar predicates which do not take infinitive complements under the same conditions, for example, *say, announce*:

(323) *John said Norm to have left

(324) *John announced Norm to have left

For many speakers, however, the use of the infinitive with *report* is not wholly idiosyncratic, but rather reflects a meaning contrast. (322) differs from (308) in presenting the information given in the complement as less reliable, possibly contrary-to-fact whereas the information given in the complement in (308) is, from the speaker's point of view more likely to be factual (Postal 1974). The use of the infinitive for indirect discourse in English has often been attributed to Latin influence, for example by Visser (1973).

While the use of such devices in English is peripheral at best, many languages possess regular devices for indicating the reliability of information given as indirect quotes. One such device was illustrated in section 1.2 for Jacaltec, where the complementizer marked an indirect quote as representing reliable or unreliable information.

3.2.2 *Propositional attittude predicates*

Propositional attitude predicates express an attitude regarding the truth of the proposition expressed as their complement. The propositional attitude may be positive as in the verbs *believe, think, suppose, assume,* etc., or negative as in *not believe, doubt, deny,* etc. Animate subjects of such predicates are experiencers, as opposed tothe agentive basic subjects of utterance predicates. Experiencers, however, needn't be overtly expressed. In sentences like

(325) It's certain that Hugh will be defeated

(326) It's possible that Perry will lose

the holder of the propositional attitude must be the speaker and therefore the experiencer is contextually redundant in such sentences.[31] Many languages do not have predicates such as *be certain,* using instead predicates like *believe* where the experiencer, the holder of the propositional attitude, is always overtly expressed. Further, some languages have only one true propositional attitude predicate, expressing a stronger or weaker commitment to the truth of the complement proposition via verb inflections, sentence particles or adverbs, complementizers, complement types, etc., and negative propositional attitude via negation.

Predicates expressing positive propositional attitude are the most likely predicates to be used parenthetically (section 2.5).

With first person subjects, English is likely to express degrees of certainty or commitment to a proposition by means of different CTPs (*eg be certain* versus *be possible, believe* versus *doubt),* negation, or by means of adverbials, for instance:

(327) I sort of believe that the Mets will win (but I'm not certain)

---

[31]Predicates like *be evident* in

It's evident to George that Ron frequently blunders

seem to allow for two holders of propositional attitude, George and the speaker, since if this sentence is said sincerely (not ironically) the speaker is committed to the truth of the complement proposition.

When the subject is not first person, the speaker can still express varying degrees of commitment to the complement predication. In ordinary usage

(328) Olaf thinks the Mets will win

suggests a negative propositional attitude on the part of the speaker. This negative attitude can be expressed overtly (not left to inference) as

(329) Olaf stupidly believes that the Mets will win

(330) Olaf stupidly guesses that the Mets will win

The tendency across languages is for the CTP to express the subject's propositional attitude, while adverbials, choice of complementizer and complement type normally express the speaker's propositional attitude.

In Jacaltec, the complementizers *chubil* and *tato* perform the function of indicating speaker propositional attitude with propositional attitude predicates, just as they do with utterance predicates (section 1.2; Craig 1977). Givón and Kimenyi (1974) report a similar situation in Kinyarwanda where the choice of *ko* and *ngo* as complementizers reflects a neutral versus negative propositional attitude on the part of the speaker:

(331) Yatekereže ko amazi yari mare-mare
think-3SG-PAST COMP water be-3SG deep
'He thought that the water was deep'

(332) Yatekereže ngo amazi yari mare-mare
'He (misguidedly) thought that the water was deep'

Speaker propositional attitude can also be indicated by choice of complement type. Indicative versus subjunctive complements can be used, as described in section 3.1.1, to indicate positive versus negative propositional attitude.

Complements to negative propositional attitude predicates like *doubt* not infrequently appear in the form of questions. This phenomenon occurs in Irish:

(333) An dtiocfadh sé?
Q come-FUT he
'Will he come?'

(334) Tá amhras orm an dtiocfadh sé
COP doubt on me Q come-FUT he
'I doubt if he'll come'

English uses special complementizers, *if* and *whether,* under these conditions. See section 3.1.3 for discussion of the use of *if* in such sentences in English. The use of the interrogative form in Irish has a similar explanation, namely that the question morphology indicates uncertainty on the part of the speaker. Complements to utterance predicates like *ask* that report questions exhibit this feature as well.

3.2.3 *Pretence predicates*

Pretence predicates are a semantically complex class whose subjects may be either experiencers *(imagine,* some senses of *pretend, make believe)* or agents [*fool (into thinking), trick (into thinking),* some senses of *pretend, make believe*]. These predicates have as a characteristic that the world described by the proposition embodied in the complement is not the real world. The status of the complement proposition in the real world is not given, though there is a very general implication that the proposition is false (Kempson 1975). The complements to these predicates have ITR.

The interesting aspect of these complements from the standpoint of complementation is the form of their complements in systems contrasting indicative and subjunctive complement types. Complements to pretence predicates are normally interpreted as hypothetical nonevents, and hence would seem to be classified as irrealis or non-assertive (cf. section 3.1.1) . One would expect, then, that in languages that used a realis/irrealis or assertive/non-assertive contrast to underlie their indicative/subjunctive distinction, complements to pretence predicates would be coded as subjunctives. This, however, is not the case: these complements are coded as indicatives. Russian, as illustrated in section 3.1.1, uses a realis/irrealis distinction for its indicatives and subjunctives. Complements to *pritvorjatsja* 'pretend' are indicative; the subjunctive is unacceptable (data from Boris Palant):

(335) Ja pritvorjalsja, čto Ivan prišël
I pretended COMP Ivan came-INDIC
'I pretended that Ivan came'

(336) *Ja pritvorjalsja, čtoby Ivan prišël
I pretended COMP Ivan come-SJNCT
'I pretended that Ivan came'

Similarly in Spanish, which uses an assertive/non-assertive distinction, only indicatives are possible with these predicates (data from Andrés Gallardo):

(337) Aparentaron que vino
pretended-3PL COMP came-3SG-INDIC
'They pretended that he came'

(338) *Aparentaron que viniera
pretended-3PL COMP come-3SG-SJNCT

'They pretended that he came'

The reason for the indicative in these cases seems to derive from the fact that the pretence predicate establishes an alternative reality and the complement constitutes an assertion within that alternative reality. As an assertion, it is coded in the indicative. This serves to emphasize the fact that it is the function of the complement and its relation with its CTP that determine complement type, not entailment relations, as is often implied in the literature (*eg* Karttunen 1971b, Kiparsky and Kiparsky 1970) .

3.2.4 *Commentative predicates (factives)*

The term 'commentative' has been chosen here over the more traditional term 'factive' because commentative is a more general term and more clearly characterizes the range of uses of these predicates.[32] Comentative predicates resemble propositional attitude predicates in that, when an overt human subject appears, the subject is an experiencer since the predicate gives information about mental attitudes. They differ from propositional attitude predicates in that they provide a comment on the complement proposition which takes the form of an emotional reaction or evaluation *(regret, be sorry, be sad)* or a judgement *(be odd, be significant, be important).* Both emotional evaluations and judgements are normally made on events or states that people take to be real (Rosenberg 1975). As a result, complements to commentative predicates have been said to be presupposed.[33] Further, sentences with commentative CTPs typically take the form of a comment expressed by the CTP on the complement proposition as topic (old, background information) so complements to commentative CTPs are discourse dependents (section 3.1.1).

Discourse-dependent complements have ITR (their time reference doesn't logically depend on the CTP), and therefore are normally coded as indicative complements. Their discourse dependency would also make them compatible with nominalizations (section 3.1.5). English allows both S-like and nominalized complement types with these complements:

(339) Nelson regrets that Perry got the nod

(340) Nelson regrets Perry's getting the nod

Languages that employ an assertive/non-assertive distinction for their indicative/subjunctive opposition will use a subjunctive complement type for these complements.

Commentative predicates also occur with infinitive complements in English (Kiparsky and Kiparsky 1970, Spears 1973). The consequences of juxtaposing a commentative predicate and a DTR infinitive in English would seem to be predictable, namely the CTP would provide a comment on any potential occurrence of the proposition

[32]There is a considerable literature on these predicates, for example Kiparsky and Kiparsky (1970), Morgan (1969), Karttunen (1971b), Kempson (1975).

[33]Kiparsky and Kiparsky (1970), Kempson (1975), Rosenberg (1975).

embodied in the complement consistent with the time reference of the CTP. The controllability factor (section 3.1.2) is not involved in the interpretation of infinitive complements of commentatives, since the complement does not refer to a specific event with a fixed time reference relative to the CTP.

When the 'any potential occurrence' interpretation of infinitives in these cases coincides with a pragmatic interpretation of the complement proposition as punctual (representing a single event), then the interpretation of s-like complements and infinitives may be virtually identical:

(341) It was odd that Floyd came

(342) It was odd for Floyd to come

In other cases, however, the two may differ considerably in meaning:

(343) It's odd that turtles don't outrun rabbits

(344) It's odd for turtles not to outrun rabbits

The sentence (343) amounts to a comment on the proposition

(345) Turtles don't outrun rabbits

whereas (344) implies that turtles usually do outrun rabbits. (343) comments on the complement as representing a fact; non-reduced complements are interpreted as having independent existence and so can accommodate a factive interpretation. (344) comments on the complement as a potential occurrence. Judging a fact as odd is quite distinct from judging a potential occurrence as odd, hence the meaning difference .

In languages where adjectives are syntactically distinguished from verbs, there is a strong preference for coding commentative predicates as adjectives. Many languages have only adjectives filling this class of predicates, *ie* forms like *be sorry* in place of *regret,* etc.

3.2.5 *Predicates of knowledge and acquisition of knowledge*

This class of predicates has been called 'semifactive' (Karttunen 1971a, Terrell and Hooper 1974) and 'epistemic-qualifying' (Guitart 1978). These predicates take experiencer subjects and describe the state or the manner of acquisition of knowledge. Knowledge and acquisition of knowledge (KAK) predicates include *know, discover, realize, find out,* and *forget,* as well as perception predicates such as *see* and *hear* when used in a sense other than that of immediate perception (section 3.2.12) *ie* as in (346) but not (347):

(346) I saw that Floyd left (KAK sense)

(347) I saw Floyd leave (Immediate perception sense)

Dream is also a KAK predicate where the source of knowledge is not the real world (in most cultural contexts).

Excluding *dream* from further consideration here, complements to KAK predicates are presupposed to be true, since it only makes sense to assert knowledge or acquisition of knowledge about something one takes as a fact. Complements to KAK predicates, however, differ from complements to commentative predicates in that they do not necessarily constitute backgrounded material, but instead may be new in the discourse context, being part of what is asserted. One can assert both the manner of acquisition of knowledge as well as the content of the knowledge as new information, so that;

(348) I discovered that Sally left Herman

can present the complement as new information (and could therefore be used appropriately where the content of the complement was not known), whereas;

(349) I regret that Sally left Herman

cannot felicitously be used to present this information as new.

Since complements to KAK predicates have ITR, and are typically part of what is asserted (are not discourse dependent), they are normally encoded as indicative complements. When KAK predicates are negated or questioned, however, they may be used to express negative propositional attitude toward the complement proposition, in which case the usual syntactic consequences of negative propositional attitude follow in the context of a given language. In Spanish, such complements are put in the subjunctive (Guitart 1978), the usual procedure in Spanish for negative propositional attitude.

The predicate *know* has some unique properties. Unlike the other predicates of this class, *know* makes no assertion about manner of acquisition, only the fact of knowledge. As a result, its complements typically represent backgrounded material like commentatives. In addition to the fact of knowledge, however, *know* also asserts a positive propositional attitude toward its complement like *believe,* and unlike the commentative *regret,* which asserts an emotional reaction and comments on the complement as background. The form of complements with *know* cross-linguistically are like those of *believe* and unlike those of *regret* where the two differ. Evidently, expression of propositional attitude is a stronger determiner of complement type than backgrounding.

3.2.6 *Predicates of fearing*

Predicates of fearing, such as *be afraid, fear, worry* and *be anxious* have enough peculiarities cross-linguistically to merit dealing with them as a class. They are characterized semantically by having experiencer subjects and expressing an attitude of fear or concern that the complement proposition will be or has been realized. The complement has ITR.

One peculiarity of complements to predicates of fearing is that languages differ in the assignment of negation to such complements. In English (350), Irish (351), and Jacaltec (352) [Jacaltec data from Craig 1977], for example, the complement is expressed as a positive statement if it is interpreted affirmatively:

(350) He's afraid *that Floyd came*

(351) Is eagal léi *go dtiocfaidh sé*
COP fear with her COMP come-FUT he
'She's afraid that he'll come'

(352) Chin xiw *tato chach ayc'ayoj swɪ' te' ŋah*
COP-1SG afraid COMP you fall down top-3SG-POSS the house
'I'm afraid that you'll fall from the roof'

In Latin, however, it is expressed as a negative if interpreted affirmatively, and as a positive if interpreted negatively (data from Greenough 1903):

(353) Vereor *ne accidat*
fear-1SG NEG happen-3SG
'I fear that it may happen'

(354) Vereor *ut accidat*
fear-1SG COMP happen-3SG
'I fear that it may not happen'

In Russian, a complement that is interpreted affirmatively is put in the negative (and in the subjunctive) if the complement represents simple possibility, but in the positive (and the indicative) if the complement is interpreted as something almost certain to occur:

(355) Ja bojus', *kak by on ne prišël*
I fear-1SG COMP SJNCT he NEG come-SJNCT
'I'm afraid that he may come'

(356) Ja bojus', *čto on pridët*
I fear-1SG COMP he come-FUT-INDIC
'I'm afraid that he'll come'

As in the Russian case above, many languages possess devices to indicate the degree of certainty for the realization of the complement proposition. Russian changes the negation of the complement, uses its indicative/subjunctive distinction, and changes the complementizer (which is independent of the mood category switch since both *čto* and *kak* can occur with indicatives and subjunctives). When the indicative/subjunctive

distinction is based on a realis/irrealis or assertive/non-assertive opposition, a language may use the indicative for more certain complements of fearing, and the subjunctive for less certain ones.

Predicates of fearing commonly occur with non-s-like complement types such as infinitives, especially when an equi-relation exists between notional subjects. In such cases, a meaning contrast between non-reduced and reduced complement types can be exploited:

(357) *Non-reduced complements*

a. I was afraid that I fell asleep

b. I was afraid that I would fall asleep

c. I was afraid that I left

d. I was afraid that I would leave

(358) *Reduced complements*

a. I was afraid to fall asleep

b. I was afraid to leave

(358) differs from (357) in the 'control factor' discussed in section 3.1.2 which is associated with complement types with DTR such as the English infinitive. In (358), the subject is presented as a potential controller of the complement event, whereas in (357) the subject is expressed as a simple experiencer of emotion.

In English, Irish, and a number of other languages, predicates of fearing are frequently used as parentheticals:

(359) John, I'm afraid, is a Democrat

3.2.7 *Desiderative predicates*

Desiderative predicates, such as *want*, *wish, desire* and *hope* are characterized by having experiencer subjects expressing a desire that the complement proposition be realized. In this respect, they can be looked on as being the opposite of predicates of fearing, expressing a positive as opposed to a negative feeling about the ultimate realization of the complement proposition.

Desiderative predicates divide up semantically into three usage classes. The first, the *hope-class,* has complements with ITR, as we see in the following examples:

(360) I hope that John came

(361) I hope that John will come

Hope-class predicates are the true counterparts of predicates of fearing since both types express an emotional attitude toward a proposition whose status is, for whatever reason, unknown, but which could turn out to be true. The *wish*-class predicates also have ITR complements,

(362) I wish that John came/had come

(363) I wish that John would come

but differ from those of the *hope-class* in that they are normally given a contrafactive interpretation, so that while the status of *John came* in (360) is simply unknown, the complement in (362) is implied to be false. This difference between *wish-* and *hope-class* predicates holds even when the complements have future reference; the complement in (364) is implied to be at least likely to be realized, whereas the complement in (365) is implied to be only a remote possibility:

(364) I hope that Smith will resign

(365) I wish that Smith would resign

If the complement proposition is incapable of realization, for whatever reason, it cannot be a complement of a *hope-class* predicate but can be a complement of a *wish-class* predicate:

(366) *I hope that I was/were twenty again

(367) I wish that I were twenty again

The contrafactive interpretation of *wish-class* predicates has its counterpart in the morphology of the verb complex. Notice that (365) uses the modal *would* while (364) has *will; will* expresses definite possibility, *would* has a less definite, hypothetical interpretation. In (367) the complement appears in the past subjunctive, a residual category in English used in hypothetical or contrafactive contexts. *Would is* the past subjunctive of *will.*

The third and last class is the want-class. Complements to *want*-class predicates have DTR, and express a desire that some state or event may be realized in the future. The complement in

(368) I want John to come

can only have future reference. *Want*-class predicates resemble *wish*-class predicates in that their complements may refer to an unrealizable state of affairs.

(369) He wants to be twenty again; he's a bit crazy

All languages share the three-way classification between the *hope-, wish-* and *want*-classes, but they do not all make the same formal distinctions. Most common is a distinction between the *wish*-class and either or both of the other two. Other languages may not make the same lexical distinctions that English does for the CTP verbs themselves, but they may have contrasting choices for complement types, or they may have reliability, irrealis or conditional markers on the CTP, on the complement predicate, or both.

The complement types used by these classes of predicates follow from their meaning. *Hope*-class predicates are usually associated with nonreduced complements. In Russian, for example, *hope*-class predicates take indicative complements:

(370) Ja nadejusʹ, čto Ivan prišël
I hope-1SG COMP Ivan came-INDIC
'I hope that Ivan came'

Spanish also uses an indicative with these predicates. *Hope*-class predicates differ from other desideratives also in their inability to allow negative raising (Horn 1978). Verbs used as *hope*-class predicates can often double as *want*-class predicates as in

(371) I hope to go

especially when an equi-relation exists between notional subjects. The complement type, then, is the same as for the DTR complements of want-class predicates, namely reduced complements, typically subjunctives or infinitives. These forms will be used if they are available in the system (see section 4). A frequently encountered situation for *want*-class predicates is the use of infinitives when an equi-relation exists between subjects, and subjunctives when no equi-relation exists. Lango provides an illustration of this:

(372) Dákô àmìtto jwàttò lócə̀
woman want-3SG hit-INF man
'The woman wants to hit the man'

(373) Dákô àmìttò nî àtîn òjwăt lócə̀
woman want-3SG COMP child hit-3SG-SJNCT man
'The woman wants the child to hit the man'

As the glosses to the above sentences show, English uses infinitives for both types of sentences, raising the complement subject to object position (section 2.2) when no equi-relation exists. This sort of situation is somewhat rare. A rather more common situation is exemplified by Albanian, where even with an equi-relation the subjunctive is used (data from Ferit Rustemi):

(374) Gruaja deshi njeriu ta *vjedhë* pulën
woman-NOM wanted-3SG man-NOM COMP steal-3SG-SJNCT chicken-ACC
'The woman wanted the man to steal the chicken'

(375) Gruaja deshi ta *vjedhë* pulën
woman-NOM wanted-3SG COMP steal-3SG-SJNCT chicken-ACC
'The woman wanted to steal the chicken'

Desiderative predicates are good candidates for lexical union (section 2.3) and examples can be found from many language families. Below is an example from Sanskrit (Gonda 1966):

(376) Pibati
drink-3SG
'He's drinking'

(377) Pipāsati
drink want-3SG
'He wants to drink'

In many languages, the subjunctive in a main clause has the force of a desiderative CTP plus complement, as in Catalan (data from Yates 1975):

(378) Que tinguin bon viatge
COMP have-2PL-SJNCT good journey
'Have a good trip' (I hope you have a good trip)

Some languages may use a mood other than the subjunctive to express desire in a main clause. The Greek optative is an example of this sort:

(379) fúgoi
flee-3SG-OPTATIVE
'May he flee' (I want him to flee)

Cases like this can be difficult to distinguish from imperatives.

There are a number of cases of forms doing double duty. In Irish, for example, *maith* 'good' can be used both as a commentative and a desiderative predicate:

(380) *Commentative*
Is maith dhó í a theacht
be good to him her COMP come-NZN
'It's good for him that she came'

(381) *Desiderative*
Ba mhaith liom í a theacht
be-COND good with me her COMP come-NZN
'I want her to come'

The syntactic difference between (380) and (381) involves the use of the conditional mood (chapter III:4) on the supporting copula in the matrix, and a change in preposition: *do* 'to' with the benefactee in the commentative, *le* 'with' with the experiencer in the desiderative. In Hebrew, the word *xošev* does double duty as a propositional attitude predicate and as a desiderative: with indicative complements it means 'I think' and with infinitive complements it means 'I plan' (data from Ora Leivant):

(382) Ani xošev še-ha-iš ganav et ha-kesef
I think COMP-ART-man stole OBJ ART-money
'I think that the man stole the money'

(383) Ani xošev lignov et ha-kesef
I plan steal-INF OBJ ART-money
'I plan to steal the money'

The control factor (section 3.1.2) associated with the DTR infinitive accounts for the meaning shifts. The predicate meaning 'want' frequently does double duty as a modal predicate expressing 'need' or 'necessity'. Because of the DTR future orientation of *want*-class predicates, they frequently come to be used as markers of future (as in many of the Balkan languages).

3.2.8 *Manipulative predicates*
Manipulatives include the closely related causative and permissive predicates, both involving an element of causation. We are concerned in this section with 'efficient' not 'final' cause (Longacre 1976), since final cause is normally expressed via adjuncts (*eg* purpose clauses, 'John went *in order to please Harriet*'). Manipulative predicates express a relation between an agent or a situation which functions as a cause, an affectee, and a resulting situation. The affectee must be a participant in the resulting situation. When the cause is a situation, the sentence may be rendered not by a complement structure, but rather by a structure like the English *because*-construction:

(384) Floyd hit Roscoe because Zeke forced him

The meaning of (384) can also be rendered via complementation:

(385) Zeke's forcing Floyd made him hit Roscoe

(386) Zeke forced Floyd to hit Roscoe

Manipulative CTPs typically encode situations where the agent attempts to manipulate the affectee into performing some action or assuming some state.

Manipulative predicates may be simple *(cause)* or, when lexical structures in a language permit, they may in addition encode information about the manner of causation *(force, make, persuade, tell, threaten, let, cajole),* sometimes including an illocutionary act *(command, order, request, ask,* and other predicates that are primarily utterance predicates).

The nature of the causative relationship requires a specific temporal order of cause and effect, so complements to manipulative predicates have DTR and are reduced. Since there is an obligatory coreference between the affectee (the DO of the manipulative predicate) and the subject of the complement, the complement subject may be non-overt, resulting in an infinitive. This happens in English and in Spanish (Spanish data from Pat Seaver):

(387) Max persuaded Nellie to run for mayor

(388) Juan le dejó armar-la
John him let-3SG assemble-INF-it
'John let him assemble it'

In some languages, equi-deletion requires identity between subjects, so that a sentence-like reduced complement type (*eg* subjunctive) is used instead, as in Lango:

(389) Dákô òdĩò lócà nî òtĕt kwèrí
woman pressed-3SG man COMP to forge-3SG-SJNCT hoe
'The woman pressed the man to forge the hoe'

The causative relation itself is neutral as to whether the complement proposition is necessarily realized or non-realized. Many languages have devices to indicate such relationships. English, generally speaking, indicates the difference between realized versus non-realized interpretations of complement propositions lexically in the matrix CTP. For example, complements to *force* are interpreted as realized, whereas complements to *persuade* and especially *press* are not:

(390) I forced Hugh to resign
(implies Hugh resigned)

(391) I persuaded Hugh to resign
(implies that Hugh was convinced that he should resign, but carried no implication about his actual resignation)[34]

[34]For some speakers, *persuade* is like *force*, not *press*.

(392) I pressed Hugh to resign
(quite neutral as to whether or not Hugh resigned)

Other languages may mark this difference by choice of complement type. In the Lango sentence, (389), above, the complement is neutral as to whether it is realized or not. When the subjunctive of (389) is replaced by the paratactic complement of (393), the complement receives a realized interpretation:

(393) Dákô òdȉò lócà òtètò kwɛ̀rí
woman pressed-3SG man forged-3SG-INDIC hoe
'The woman pressed the man; he forged the hoe'
(The woman forced the man to forge a hoe)

Causatives, even more than desideratives, are good candidates for lexical union. Below is an example from Amharic (data from Mariam Assefa Morrisey):

(394) Yɨməṭ'al
come-FUT-3SG.MASC.SUBJ
'He'll come'

(395) Yamət'əwal
come-CAUSE-FUT-3SG.MASC.OBJ-3SG.MASC.SUBJ
'He'll bring it' (He'll cause it to come)

3.2.9 *Modal predicates*

Broadly defined, modal predicates would include any predicate expressing modality which is epistemic (concerned with degree of certainty of knowledge) or deontic (concerned with moral obligation or permission). We have included predicates meeting the epistemic part of this definition in the category of propositional attitude predicates. Here we will restrict the term to just those predicates expressing moral obligation and moral necessity, and group these with predicates of ability which resemble them closely in syntactic properties. Modal predicates in English, then, will include forms such as *can, be able, ought, should, may,* and *be obliged.* We note that most of these forms have epistemic interpretation as well, a frequently encountered situation across languages.

Modal predicates all have complements with DTR.[35] Complements to modals refer to either future events or states (relative to the time reference of the CTP):

(396) Leon has to be in Fresno by three

[35]Notice that with epistemic interpretations, complements have ITR:
It must be that Arnold owns an Edsel

or potential events or states-of-affairs:

(397) Vladimir can eat a whole pizza

As a result, modals take reduced complements such as subjunctives and infinitives. Modal predicates may give the appearance of being one-place predicates

(398) It's necessary for Leon to be in Fresno by three

or two-place predicates with an equi-deleted complement subject:

(399) Leon must be in Fresno by three

Their use with subjunctives in many languages, as in the Albanian (see (400)) and Lori (see (401)) examples below, seems to argue for a two-place analysis, while purely semantic considerations favor the one-place analysis with subject raising:[36]

(400) Njeriu mundeshte te vjedhë pulën
man was able-3SG COMP steal-3SG-SJNCT chicken
'The man was able to steal a chicken'

(401) Pia i-tæres ke tile-ye bedoze
man PROG-was able-3SG COMP chicken-OBJ steal-3SG-SJNCT
'The man was able to steal a chicken'

Modal predicates are excellent candidates for clause or lexical union (section 2.3); English and other Germanic languages provide examples of clause union with these predicates. In English, a number of modal predicates such as *can, must, should, may,* etc. function as a special syntactic class of verbal auxiliaries with a set of unique syntactic properties (see Palmer 1968, 1986, Allen 1966). The Turkish 'necessitative' provides an example of lexical union with this class; *-meli* 'ought' can be suffixed to any verbal root to form a necessitative verbal stem (Lewis 1967):

(402) Gel-di-m
'I came'

(403) Gel-eceğ-im
'I'll come'

(404) Gel-meli-yim
'I ought to come'

[36]Some discussion of this issue can be found in Jenkins (1972).

In many languages, subjunctives used as main clauses may be given a modal interpretation, as well as the semantically related imperative sense.

3.2.10 *Achievement predicates*

Achievement predicates were discussed by Karttunen (1971a) under the name of 'implicative' predicates. Achievement predicates can be divided into positive and negative achievement classes. Positive achievement predicates such as *manage, chance, dare, remember to, happen to* and *get to* refer to the manner or realization of achievement. Negative achievement predicates, such as *try, forget to, fail* and *avoid* refer to the manner or reason for the lack of achievement in the complement predication. In both the positive and negative cases the complement has DTR since the time reference of the achievement (or lack of achievement) of the event will have the same time reference as the event (or its non-occurrence). Complements to achievement predicates, then, will take the form of reduced complements.

Complements to achievement predicates (especially negative achievement predicates) frequently represent names of activities or backgrounded propositions and so are compatible with nominalized propositions when these are available (*cf* section 3.1.5):

(405) Zeke tried eating spinach

(406) Nelson avoids taking baths

3.2.11 *Phasal predicates (aspectuals)*

These predicates have been termed aspectuals' by Newmeyer (1969) and others. The useful term 'phasal' is derived from Longacre (1976). Phasal predicates refer to the phase of an act or state: its inception, continuation, or termination, and are represented in English by forms such as *begin, start, continue, keep on, finish, stop,* and *cease.* In this category, we should also place *repeat* and *resume*, predicates with an iterative sense. Complements to phasal predicates have DTR since the time reference of the above-mentioned phase of an event must be the same as that of the event itself. For this reason, phasal predicates are associated with reduced complements.

The three phases of actions or states — inception, continuation, termination — may be associated with different complement-types because each is inherently associated with a different aspect: inception with inceptive [inchoative] aspect, continuation with progressive [durative] aspect, and termination with perfective [completive] aspect. Because of the strong association between phasal predicates and aspect, complements to phasal predicates may appear in the form of adverbial [converbal] clauses not ordinarily associated with complements. This most commonly happens when languages otherwise lack complement-types which can express aspectual contrasts. So, for example, Chantyal has two complement-types: an S-like complement, only found with the quotative verb *say*; and a nominalization, which is used elsewhere. However, with phasal predicates, converbs [verbals used adverbially] with aspectual senses can be used as complements:

complements to *begin* are nominalizations, complements to *continue* are progressive converbs or nominalizations, and complements to *finish* are sequential converbs, which have a perfective sense:

(407) Ram ca-wa thali-i
Ram eat-NZN begin-PERF
'Ram began to eat'

(408) Ram ca-wa ci-i
Ram eat-NZN sit-PERF
'Ram continued to eat'

(409) Ram ca-kəy ci-i
Ram eat-PROG sit-PERF
'Ram continued to eat'

(410) Ram ca-si cɦin-ji
Ram eat-SEQ finish-PERF
'Ram finished eating' [*literally:* Ram, having eaten, finished']

Aspectual and/or tense distinctions within the set of complement-types in a given language can be exploited with phasal predicates to create contrasts in meaning. For example, in English we have the contrast between:

(411) a. Zelda started to sneeze but then didn't sneeze
b. *Zelda started sneezing but then didn't sneeze

The infinitive [*to sneeze*] has a prospective, secondary future sense among its range of meanings, whereas the gerund [*sneezing*] is neutral with regard to tense (see Freed 1979, Wierzbicka 1988, Tobin 1993 for extended discussions of this and similar contrasts in English). Further, phasal predicates with otherwise similar meanings, *e.g.* the terminatives *finish* and *cease*, may take different ranges of complement-types:

(412) a. Roscoe finished shucking the corn
b. *Roscoe finished to shuck the corn
(413) a. Roscoe ceased shucking the corn
b. Roscoe ceased to shuck the corn

Dixon (1991) explains the difference between *finish* and *cease* as one of 'object' versus 'subject' orientation, respectively: *finish* denotes cessation of activity, whereas *cease* denotes the withdrawal of involvement of the subject from the activity. *Roscoe finished shucking the corn* implies that the corn is all shucked; *Roscoe ceased to shuck the corn* implies

that Roscoe will no longer shuck corn. The prospective, secondary future sense of the infinitive in (413b) reinforces this sense.

The argument structure of clauses with phasal predicates also requires comment. In (407), repeated below,

(407) Ram ca-wa thali-i
Ram eat-NZN begin-PERF
'Ram began to eat'

it is clear that *Ram* is the subject of *ca-* 'eat' and not of *thali-* 'begin' since the case assigned to *Ram* is dependent on *ca-* not *thali-*. So, if *ca-* is used transitively, *i.e.* if there is a direct object of *ca-*, *Ram* must appear in the ergative case [subjects of transitive predicates in Chantyal are marked with the ergative (Noonan 2003)]:

(414) Ram-sə sya ca-wa thali-i
Ram-ERG meat eat-NZN begin-PERF
'Ram began to eat meat'

Since case is assigned to *Ram* by *ca-* and not by *thali-*, we can infer that *Ram* is the subject of *ca-* 'eat' and that ***Ram-sə sya ca-wa*** is a phrase functioning as the subject complement of *thali-*; *thali-* 'begin', therefore, is intransitive with a single, clausal argument, and the whole sentence means something like *Ram's eating meat began*. Notice, however, that in the English translation of (414),

(ı) Ram began to eat meat

Ram is clearly the subject of *began*. It is generally assumed that, in cases like (ı), the subject of the complement has been raised to be matrix subject [see Newmeyer (1975), Langacker (1995) for discussion of this issue].

Phasal notions can be indicated by a variety of techniques aside from phasal predicates in complementation. Many languages have verb affixes or particles for indicating these notions and, indeed, phasal predicates develop historically into aspectual particles and affixes (Bybee *et al* 1994). In some languages, continuation can be indicated by repeating the verb, as we see in this example from Tairora (Vincent 1973):

(415) Otu bi otu bi otu bi-ro
go down go go down go go down go-3SG
'He continued going down'

3.2.12 *Immediate perception predicates*

Immediate perception predicates include forms such as *see, hear, watch,* and *feel* where the predicate names the sensory mode by which the subject directly perceives the event coded in the complement. Also included in this class are predicates like *imagine,* where the

event and its perception are entirely mental. Complements to immediate perception predicates have DTR since the immediate perception of an event must have the same time reference as the event itself. Complements to immediate perception predicates will therefore be reduced, though some exceptional cases are noted below.

As mentioned in sections 1.3.6 and 3.1.5, participles are frequently used in forming complements to immediate perception predicates. In these constructions, the subject of the complement proposition is treated as the DO of the CTP and the participle takes this DO as its head. A related construction is found in Lori ((416), data from Stan Murai), French ((417), data from June Mathias), Spanish ((418), data from Pat Seaver), and a few other languages where the complement takes the form of a relative clause with the DO as its head:

(416) Zine pia-ye di ke tile-ye i-dozi
woman man-OBJ saw COMP chicken-OBJ PROG-steal-3SG
'The woman saw the man stealing the chicken'

(417) Marie voit Roger qui mange les pommes
Marie sees Roger RPRO eat the apples
'Mary sees Roger eating the apples'

(418) Oigo a Juan que toca la guitarra
hear-1SG to John COMP play-3SG the guitar
'I hear John playing the guitar'

Both Spanish and French more commonly use infinitives as complements to these predicates.[37]

It is important to note, as Kirsner and Thompson (1976) point out, that semantically it is the entire event, not the argument coded as the matrix direct object, that is perceived. For example, in the sentence

(419) I smelled Hank spreading the fertilizer

it is not Hank that is smelled. Similar arguments would apply for other instances of raising, for example with *want* in English.

A few languages use ordinary indicative complements with immediate perception predicates, creating a construction that may be identical to the KAK predicate use of perception predicates. Eastern Armenian appears to provide an example of this (data from Galust Mardirussian):

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[37]The use of participles with immediate perception predicates was discussed in section 3.1.5. The relative clause constructions, quite rare cross-linguistically, probably have a similar explanation, due to the functional similarity of participles and relative clauses. These relative clause constructions have been discussed by Kayne (1975), Mathias (1978), and Seaver (1978), who note the differences between these and ordinary relative clauses (which are simply the product of pragmatic factors).

(420) Kənik-ə tesav vor mard-ə hav-ə gojatsʰav
woman-ART saw-3SG COMP man-ART chicken-ART stole-3SG
'The woman saw the man steal the chicken'
(The woman saw that the man stole the chicken)

Such cases may be difficult to distinguish from relative clause complements where the relative clause has been moved to postverbal position. Some languages differentiate immediate perception versus KAK uses of perception predicates by choice of complementizer. In Malay, for example, the complementizer *bahwa is* normally optional; it is optional with KAK uses of perception predicates, but cannot be used with immediate perception senses. *Ingok* 'watch', which has no KAK counterpart, illustrates this (data from Eng-Kwong Cheang):

(421) Saya měn-ingok (*bahwa) orang itu sědang měn-churi ayam
I TRANS-watch (COMP) man the PROG TRANS-steal chicken
'I watched the man stealing the chicken'

Alongside the participles and relative clauses noted above, complement-types not otherwise found in the complement system may be used with immediate perception predicates. Russian, for example, uses a special complementizer *kak* with the indicative for complements to these predicates. In complementation, *kak is* otherwise found only with the subjunctive as complements to predicates of fearing:

(422) Ja videl kak Boris čitaet knigu
I saw COMP Boris read book
'I saw Boris reading a book'

The complement does not undergo tense copying. The KAK use of the above CTP would result in a sentence differing from (422) only in the substitution of *čto* for *kak*, the ordinary indicative complementizer.

Languages can distinguish between agentive (deliberate) and non-agentive (non-deliberate) perception. This is very frequently done in the case of visual perception, as in the English lexical contrast between *watch* and *see.* Only the non-deliberate forms have counterparts in KAK predicates.

3.2.13 *Negative predicates*

While in the great majority of the world's languages, negation is accomplished via a negative particle, or, more rarely, a negative conjugation or negative verbal stem, a few languages express negation as a CTP which takes the negated proposition as its complement (*cf* chapter I:4). From a semantic point of view, this state of affairs is quite reasonable since negation can be expressed in logic as a one-place predicate. The rarity of overt

negative predicates is more a reflection of the convenience of a negative particle versus a complement construction than of any semantic considerations.

An example of a negative predicate is provided by Fijian (Churchward 1941):

(423) Ena lako ko koya
FUT go ART he
'He will go'

(424) Ena sega ni lako ko koya
FUT NEG COMP go ART he
'He won't go'

Another example is provided by Shuswap (Kuipers 1974):

(425) χəqpnwθw'n
understand-1SG
'I understand'

(426) Tá? k s-xəqpnwθw'n
NEG ART NZN-understand-1SG
'I don't understand'

In (426) the negative predicate takes a nominalized complement.

Complements to negative predicates have DTR since the time reference of a preposition must be the same as its negation.

3.2.14 *Conjunctive predicates*

A few languages use verbs to translate English conjunctions like *and* and *and then.* Semantically, such conjunctions can be viewed as two-place predicates. Whether the complement to such predicates would have ITR or DTR would depend on the meaning of the predicate.

In Lango, there is a conjunctive predicate *tɛ̂* meaning 'and then'. This predicate only appears in the habitual aspect and is conjugated for person, agreeing with the subject of the second conjoined clause. The second clause appears in the form of an infinitive, while the first clauses precedes *tɛ̂* and is not marked as subordinate in any way:

(427) Àcámò rìŋó àtɛ̂ màttò pì
ate-1SG meat and then-1SG drink-INF water
'I ate meat and then I drank water'

(428) Á'bínô pìttò kɔ́tí tɛ̂ dɔ̀ŋɔ̀
Come-1SG plant-INF seeds and then-3SG grow-INF
'I'll plant the seeds and then they'll grow'

(429) Òtèdò rìŋó òtɛ̂ càmmò
cook-3SG meat and then-1PL eat-INF
'He cooked the meat and then we ate it'

This construction occurs frequently in Lango discourse.

4 Complement systems

With the exception of negative and conjunctive CTPs, all languages have about the same set of uses of CTPs and their complements. All languages do not, however, have the same number or kinds of complement types. In this section, we will examine the ways in which complement types are distributed among the various CTPs.

As mentioned in section 1, languages differ as to the number and kinds of complement types available to them. English, for example, has an indicative, a rather moribund subjunctive, an infinitive, a nominalization, and a participle. Lango has an indicative, a subjunctive, a paratactic complement, and an infinitive. Lori has an indicative, a subjunctive, and a nominalization. Albanian has an indicative, a subjunctive, and a participle. Irish has an indicative and a nominalization. As discussed in section 3, each of the complement types mentioned above has a special affinity for certain uses, but since the entire system must be accommodated, the range of any given complement type may be extended beyond its 'ideal' range. In general, the fewer the oppositions available within a complement system, the more likely a given complement type will be extended beyond its ideal range.

We will discuss briefly some representative complement systems. Compare, for example, the description of the Lango system presented below and that given in Noonan (1992). Where the ranges of two complement types overlap, it is understood that either complement type could occur in that context.

All languages have an s-like indicative complement type, and all languages have some sort of reduced complement type in opposition to the indicative. Complement systems with two members tend to make their primary break at the ITR/DTR distinction, the morphology of the reduced complement type determining to a large degree any other semantic distinctions that may be present in the system. In Albanian, the indicative codes all ITR contexts, the subjunctive, DTR contexts. In Irish, however, the nominalized complement type is not only used in all DTR cases, but is also used in any context where the complement is backgrounded; the nominalized complement type is exploited both as the reduced complement type and as a nominal.

The Albanian subjunctive simply fills the role of reduced complement type; in a two-member system, a subjunctive is seldom used for more than this. This is true also for infinitives in two-member systems. The Albanian situation is typical of many Balkan languages, such as Macedonian, Bulgarian, and Modern Greek. The Irish situation described above is typical of the Celtic languages. A variation on this sort of two-member system is illustrated by Lahu, which contrasts an indicative complement type used in ITR contexts

with an infinitive complement type used only in DTR contexts. Malay contrasts an indicative with an infinitive complement type which is distinguished from the indicative in that it cannot form a syntactic constituent with its notional subject and cannot occur with auxiliaries and particles. This complement type has DTR only, occurs only when its notional subject is equi-deleted under identity with the matrix subject or DO. This sort of system is often encountered in languages that do not inflect verbs for tense, aspect, and mood. Another sort of two-member system is found in Squamish and other Native American languages, where the indicative complement is almost restricted to complements of utterance predicates; the nominalized complement type, which can express full tense-aspect and mood distinctions, is used elsewhere.

Three-member systems typically include indicative, subjunctive, and infinitive or nominalized complement types. In systems like this, the subjunctive frequently codes irrealis modality (section 3.1.1). In Russian, for example, the indicative is used in realis contexts with ITR and for complements to immediate perception predicates. The subjunctive codes irrealis contexts. The infinitive is used in DTR contexts where the complement subject has been equi-deleted under identity with matrix subject or direct object (see Brecht 1974). The subjunctive is used in all other DTR contexts. Persian has a similar system except that it replaces the infinitive with a nominal complement. The Persian nominalized complement has a greater range than the Russian infinitive, since it is used in all the contexts the infinitive is, as well as being used to code backgrounded complements. Lori and Eastern Armenian use their three-member opposition somewhat differently. The indicative is used in all ITR contexts and for complements to immediate perception predicates. The subjunctive codes DTR contexts, while the nominal is restricted to backgrounded contexts. Three-member systems, especially of the first type, are fairly common.

Another sort of three-member opposition is illustrated by Modern Hebrew. Hebrew contrasts an indicative with an infinitive, and there is also a participle used only in immediate perception contexts. The infinitive is used only in DTR contexts, but since raising-to-object is not possible in Hebrew, the infinitive is used only when its notional subject is equi-deleted under identity with either the matrix subject or direct object.

Four-member systems typically include indicative and subjunctive complement types, and two non-S-like complement types. Catalan is typical of this sort of system, with an indicative used in assertive contexts, a subjunctive used in non-assertive contexts, an infinitive in DTR contexts where its notional subject has been equi-deleted under identity with the matrix subject, and a participial complement used for immediate perception complements. This sort of system is typical of the Western Romance languages. Another sort of four-member system is found in Lango, where the indicative codes ITR contexts, with the other three complement types used in DTR contexts: the paratactic complement is used where the complement is taken as expressing a realized situation, the subjunctive is used in unrealized situations, and the infinitive replacing either when the subject is equi-deleted. This sort of system is found in other Nilotic languages. With the effective loss of the subjunctive, most dialects of English have only a four-member system, contrasting an indicative which occurs only in ITR contexts with an infinitive used

primarily in DTR contexts (some exceptions have been noted above). The nominalized complement is used for backgrounded information, and the participles occur mainly as complements to immediate perception predicates.

Systems of more than four members are rather uncommon. These systems typically include a contrast of more than two s-like complement types. Classical Greek, for example, contrasted an indicative, a subjunctive, and an optative, all s-like complement types, with an infinitive and a participial complement type. Conservative forms of English manage a five-way contrast with just two s-like complements, contrasting an indicative, a subjunctive, an infinitive, a nominalization, and a participle.

5 A note on noun complementation

Many grammarians have distinguished ordinary complementation from noun complementation (*eg* Quirk *et al.* 1985, and Huddleston 1971). Noun complements are sometimes referred to as 'appositive clauses'. In fact, the structure of noun complements differs from other instances of complementation only in that the CTP is a noun and not a verb or an adjective. Many of the structures that we have considered in the preceding sections were in fact instances of noun complementation.

Some languages show a marked propensity for rendering predicates as nouns. In Irish, for example, predicates with experiencer arguments are typically nouns, the experiencer assuming a genitival relation to the nominalized predicate:

(430) Tá *súil* agam go bhfaighidh tú é
COP hope at me COMP get-FUT you it
'I hope that you'll get it'

(431) Tá a *fhios* agam gur tháinig sé
COP its knowledge at me COMP-PAST came he
'I know that he came'

(432) Tá *aifeála* orm go mbuailfear é
COP regret on me COMP beat-FUT-IMPRS him
'I regret that he'll be beaten'

(433) Tá *amhras* orm an dtiocfadh sé
COP doubt on me Q come-FUT he
'I doubt whether he'll come'

There is no verbal counterpart of *súil* in Modern Irish, even though other languages, for example English, can express this predicate verbally as well as nominally. But this is not just a peculiarity of Irish. English also has predicates that can function as noun heads of complement constructions, for example *fact, idea,* that have no verbal counterpart in the language. Most heads of noun complement constructions in English, however, have verbal counterparts, for example *ability* (be able), *decision (decide), hope* (hope), *belief*

(believe), *command* (command), *desire* (desire) and *suggestion (suggest)*. Though all these nominals are related to verbs, their semantic relations to them may be quite idiosyncratic as the following pairs of nominals show: *continuity* and *continuation* (continue), *referral* and *reference* (refer).

Complements to noun heads typically exhibit the same range of complement types as complements to other sorts of heads, as the following examples show:

(434) Walt's ability to chew gum and tie his shoes at the same time impressed everyone
Walt is able to chew gum and tie his shoes at the same time
INFINITIVE

(435) Andrea's belief that Max is the King of Greenland annoyed Sally
Andrea believes that Max is the King of Greenland
INDICATIVE

(436) Queen Zelda's command that Zeke be shot drew cries of protest
Queen Zelda commanded that Zeke be shot
SUBJUNCTIVE

The distribution of these complement types is dependent on the same set of semantic and pragmatic factors that determine the distribution of complements with other sorts of heads. Complements to noun heads occasionally may have to assimilate to the internal structure of NPs (see chapter III:7 for some discussion of this).

6 Obtaining information about complement systems

Most published grammatical descriptions are inadequate sources for data about the organization of the complement system. One reason for this is that complementation has not, until fairly recently, been considered a single topic for discussion in grammars. What information is available is usually scattered in various places throughout the grammar and at best may be adequate only for the reconstruction of the broad outlines of the system. A useful adjunct to the grammar when no native speaker informants can be found is a good dictionary with a generous supply of illustrative sentences. By making a list of CTPs and checking their dictionary entries, much useful information can be gleaned. Unfortunately, not all dictionaries are helpful in this way, and it is usually only dictionaries of the better-studied languages (with more helpful grammars available in any case) that provide large numbers of illustrative sentences.

It goes without saying that the best technique for obtaining data about complement systems is elicitation from native speaker informants. One should only attempt to elicit data about complementation (or any other types of complex sentences) after a basic sketch of verbal and nominal morphology and syntax has been obtained from the examination of simple sentences.

A useful procedure for obtaining an overview of the system is outlined as follows: First, prepare a list of CTPs. Use the classes of CTPs given in section 3.2 as the basis for the list. Next, select a simple transitive sentence to use as the complement proposition. It is useful to elicit complement types initially with one constant complement proposition, varying it only where the sense or the opportunity to examine certain semantic or syntactic possibilities would suggest a change. In this way, changes in the form of the complement are more easily observed and comparisons more easily made. Now, create sentences from your list of CTPs using the simple transitive sentence as the complement and ask your informant to translate. For instance, you might begin with utterance predicates as CTPs and create sentences like:

(437) a. The woman said that the boy stole the chicken

b. The woman asked the man if the boy stole the chicken

c. The woman told the man that the boy stole the chicken

Be sure to check out the various semantic and grammatical possibilities suggested in the subsections of 3.2. For example, in gathering data about utterance predicates, check out the difference between direct and indirect discourse, as in

(438) a. The woman said, 'I stole the chicken'

b. The woman said that she stole the chicken

c. The woman said that I stole the chicken

After going through your list of CTPs with your basic transitive sentence, vary the predicate in the complement and see if other predicates exhibit the same range of morphological categories in complementation. Be sure to include in your sample the predicates that are most likely to be irregular, for example *be* (if such a predicate exists in the language), *come, go,* etc., since these predicates may retain vestiges of categories no longer productive in the system as a whole.

At this stage you should have adequate data to permit you to identify complement types and to begin to speculate on their semantic range *vis-à-vis* the set of CTPs. Make some hypotheses and check them out. A useful way to check out hypotheses of this sort is to find some predicates (like *remember,* in English) that can occur with more than one complement type and try to discover what the semantic difference is in choosing one complement type over the other. Bear in mind also that the grammatical forms representing the complement types in your language are probably not restricted in use solely to the complement system, but are used elsewhere in the grammar. Your hypotheses about the function of these forms within complementation should be compatible with their use elsewhere.

7 Further Reading

There are a large number of works which deal with aspects of complementation in individual languages, but few that provide an overview of complementation, either crosslinguistically or in a particular language. Of those few, Ramson (1986) and Dixon (1991) are especially to be recommended.

Additional references include Givón (1980), Bolinger (1968), and Wierzbicka (1988) on the semantics of complement types and Bolinger (1972), Dimmendaal (1989), and Frajzyngier (1995) on complementizers. Frajzyngier (1996) is an in-depth study of subordinate constructions [mostly complement clauses] in Chadic; Genee (1998) is an in-depth study of complementation in Irish. Comrie & Horie (1995) provide an interesting discussion of the boundary between relative clauses and complements. Lehmann (1988) and Palmer (1987) place complement clauses within the general scheme of subordination and clause linkage.

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